

311-CD-500-001

EOSDIS Core System Project

Release 5A Data Management Subsystem Database Design and Database Schema Specifications for the ECS Project

Final

May 1999

Raytheon Systems Company
Upper Marlboro, Maryland

Release 5A
Data Management Subsystem Database
Design and Database Schema
Specifications for the ECS Project

Final

May 1999

Prepared Under Contract NAS5-60000
CDRL Item #050

RESPONSIBLE ENGINEER

Maureen Muganda /s/ 5/27/99
Maureen Muganda Date
EOSDIS Core System Project

SUBMITTED BY

Mary Armstrong /s/ 5/27/99
Mary Armstrong, Development Engineering Manager Date
EOSDIS Core System Project

Raytheon Systems Company
Upper Marlboro, Maryland

This page intentionally left blank.

Preface

This document describes the database design and database schema specifications for the Data Management (DM) Subsystem. It is one of eight documents comprising the detailed database design and database schema specifications for the as-delivered ECS Subsystems. A complete list of the ten documents follows:

311-CD-500 Data Management (DM) Subsystem Database Design and Database Schema Specifications for the ECS Project

311-CD-501 Ingest Subsystem (INS) Database Design and Database Schema Specifications for the ECS Project

311-CD-502 Interoperability Subsystem (IOS) Database Design and Database Schema Specifications for the ECS Project

311-CD-503 Planning and Data Processing Subsystem (PDPS) Database Design and Database Schema Specifications for the ECS Project

311-CD-504 Science Data Server (SDSRV) Subsystem Database Design and Database Schema Specifications for the ECS Project

311-CD-505 Storage Management (STMGT) Subsystem Database Design and Database Schema Specifications for the ECS Project

311-CD-506 Subscription Server (SUBSRV) Subsystem Database Design and Database Schema Specifications for the ECS Project

311-CD-507 Management Support Subsystem (MSS) Database Design and Database Schema Specifications for the ECS Project

This submittal meets the milestone specified in the Contract Data Requirements List (CDRL) of NASA Contract NAS5-60000. It is a formal contract deliverable with an approval code 2. As such, it does not require formal Government approval, however, the Government reserves the right to request changes within 45 days of the initial submittal. Once approved, contractor changes to this document are handled in accordance with Class I and Class II change control requirements described in the EOS Configuration Management Plan, and changes to this document shall be made by document change notice (DCN) or by complete revision.

Entity relationship diagrams (ERDs) presented in this document have been exported directly from software tools and in some cases contain too much detail to be easily readable within hard copy page constraints. The reader is encouraged to view these diagrams in portable document format (PDF) on the ECS Data Handling System (EDHS) world wide web (WWW) site. The universal resource locator (URL) is: <http://edhs1.gsfc.nasa.gov>.

Any questions should be addressed to:

Data Management Office
The ECS Project Office
Raytheon Systems Company
1616 McCormick Drive
Upper Marlboro, MD 20774-5301

Abstract

This document outlines the Release 5A “as-built” database design and database schema specifications for the Data Management (DM) Subsystem. It includes the entity relationship diagram (ERD), physical database table definitions, and database software listings for triggers, procedures, and scripts. The ERD describes data entities and the association between these entities used within the DM Subsystem. Other information is also included to support database installation and life cycle maintenance.

Keywords: data, database, design, specifications, configuration, installation, parameters, scripts, security, data model, replication, performance tuning, SQL server, Sybase, database security, triggers, procedures, scripts.

This page intentionally left blank.

Change Information Page

| List of Effective Pages | | | |
|--------------------------------|---------------------|-------------------------|-------------------|
| Page Number | Issue | | |
| Title | Submitted as Final | | |
| iii through xvi | Submitted as Final | | |
| 1-1 through 1-2 | Submitted as Final | | |
| 2-1 through 2-2 | Submitted as Final | | |
| 3-1 through 3-142 | Submitted as Final | | |
| 4-1 through 4-6 | Submitted as Final | | |
| 5-1 through 5-4 | Submitted as Final | | |
| 6-1 through 6-2 | Submitted as Final | | |
| A-1 through A-12 | Submitted as Final | | |
| AB-1 through AB-2 | Submitted as Final | | |
| Document History | | | |
| Document Number | Status/Issue | Publication Date | CCR Number |
| 311-CD-500-001 | Submitted as Final | May 1999 | 99-0466 |

This page intentionally left blank.

Contents

Preface

Abstract

1. Introduction

| | | |
|-----|----------------------|-----|
| 1.1 | Identification | 1-1 |
| 1.2 | Scope..... | 1-1 |
| 1.3 | Purpose..... | 1-1 |
| 1.4 | Audience | 1-1 |

2. Related Documents

| | | |
|-----|-----------------------------|-----|
| 2.1 | Applicable Documents..... | 2-1 |
| 2.2 | Information Documents | 2-2 |

3. Database Design

| | | |
|--------|---|-------|
| 3.1 | Design Overview..... | 3-1 |
| 3.1.1 | Physical Data Model Entity Relationship Diagram | 3-1 |
| 3.1.2 | Database Table Specifications | 3-5 |
| 3.1.3 | Column Specifications | 3-26 |
| 3.1.4 | Column Domains | 3-53 |
| 3.1.5 | Column Default Values..... | 3-53 |
| 3.1.6 | Referential Integrity Rules..... | 3-53 |
| 3.1.7 | Views | 3-53 |
| 3.1.8 | Declarative Integrity Constraints | 3-55 |
| 3.1.9 | Triggers | 3-61 |
| 3.1.10 | Trigger Code Listings | 3-62 |
| 3.1.11 | Stored Procedures | 3-85 |
| 3.1.12 | Stored Procedures Listings..... | 3-87 |
| 3.2 | Flat File Usage | 3-131 |
| 3.2.1 | File Descriptions | 3-131 |
| 3.2.2 | Field Specifications..... | 3-136 |
| 3.2.3 | Domain Definitions..... | 3-140 |

4. Performance and Tuning Factors

| | | |
|-----|-------------------|-----|
| 4.1 | Indexes | 4-1 |
| 4.2 | Segments | 4-5 |
| 4.3 | Named Caches..... | 4-5 |

5. Database Security

| | | |
|-----|-------------------------------------|-----|
| 5.1 | Approach..... | 5-1 |
| 5.2 | Initial Users..... | 5-1 |
| 5.3 | Groups..... | 5-2 |
| 5.4 | Roles..... | 5-2 |
| 5.5 | Login/Group Object Permissions..... | 5-3 |

6. Scripts

| | | |
|-----|-----------------------------------|-----|
| 6.1 | Installation Scripts..... | 6-1 |
| 6.2 | De-Installation Scripts..... | 6-1 |
| 6.3 | Backup and Recovery Scripts | 6-1 |
| 6.4 | Miscellaneous Scripts | 6-2 |

List of Figures

| | | |
|-----|--|-----|
| 3-1 | ERD Key | 3-2 |
| 5-1 | Sybase General Approach to SQL Server Security | 5-1 |

List of Tables

| | | |
|-------------|---------------------------------|-----|
| Table 3-1. | Database Tables..... | 3-3 |
| Table 3-2. | DmDdAcronym | 3-5 |
| Table 3-3. | DmDdAdditionalAttributes | 3-5 |
| Table 3-4. | DmDdAttributeXref..... | 3-5 |
| Table 3-5. | DmDdBoundingRectangle..... | 3-6 |
| Table 3-6. | DmDdCollECSCAttributeXref | 3-6 |
| Table 3-7. | DmDdCollectionXref | 3-7 |
| Table 3-8. | DmDdDateInstrumentChar..... | 3-7 |
| Table 3-9. | DmDdDatePlatformChar..... | 3-7 |
| Table 3-10. | DmDdDateSensorChar | 3-7 |
| Table 3-11. | DmDdDateTimeDomain | 3-8 |
| Table 3-12. | DmDdECSCAttributes | 3-8 |
| Table 3-13. | DmDdECSCollection | 3-8 |
| Table 3-14. | DmDdECSCollKeywordXref..... | 3-9 |
| Table 3-15. | DmDdECSDiscipline..... | 3-9 |

| | |
|---|------|
| Table 3-16. DmDdECSPparameterDetails | 3-10 |
| Table 3-17. DmDdECSTerm | 3-10 |
| Table 3-18. DmDdECSTopic..... | 3-10 |
| Table 3-19. DmDdECSVariable | 3-11 |
| Table 3-20. DmDdEquivalentAttributes..... | 3-11 |
| Table 3-21. DmDdFloatInstrumentChar | 3-11 |
| Table 3-22. DmDdFloatPlatformChar | 3-12 |
| Table 3-23. DmDdFloatSensorChar | 3-12 |
| Table 3-24. DmDdGlossary | 3-12 |
| Table 3-25. DmDdGroup | 3-12 |
| Table 3-26. DmDdGroupXref..... | 3-13 |
| Table 3-27. DmDdInfoMgr..... | 3-13 |
| Table 3-28. DmDdInfoMgrCollXref..... | 3-13 |
| Table 3-29. DmDdInfoMgrXref | 3-13 |
| Table 3-30. DmDdInstrument | 3-14 |
| Table 3-31. DmDdInstrumentCharacteristic..... | 3-14 |
| Table 3-32. DmDdInstrumentPlatformXref..... | 3-14 |
| Table 3-33. DmDdInstrumentXref..... | 3-15 |
| Table 3-34. DmDdIntInstrumentChar..... | 3-15 |
| Table 3-35. DmDdIntPlatformChar | 3-15 |
| Table 3-36. DmDdIntSensorChar | 3-16 |
| Table 3-37. DmDdKeywordAliasXref..... | 3-16 |
| Table 3-38. DmDdKeywordParameterXref..... | 3-16 |
| Table 3-39. DmDdLevelGroupXref..... | 3-17 |
| Table 3-40. DmDdMetadataLevel | 3-17 |
| Table 3-41. DmDdMultipleCollection | 3-17 |
| Table 3-42. DmDdNumericDomain | 3-18 |
| Table 3-43. DmDdOperationModeClass | 3-18 |
| Table 3-44. DmDdPlatform | 3-18 |

| | |
|--|------|
| Table 3-45. DmDdPlatformCharacteristic | 3-19 |
| Table 3-46. DmDdPlatformXref | 3-19 |
| Table 3-47. DmDdRangeDateTime | 3-20 |
| Table 3-48. DmDdSensor | 3-20 |
| Table 3-49. DmDdSensorCharacteristic | 3-20 |
| Table 3-50. DmDdSensorInstrumentXref | 3-21 |
| Table 3-51. DmDdSensorXref | 3-21 |
| Table 3-52. DmDdSingleTypeCollection | 3-21 |
| Table 3-53. DmDdSite | 3-22 |
| Table 3-54. DmDdSpatialDomain | 3-22 |
| Table 3-55. DmDdSpatialKeywordClass | 3-22 |
| Table 3-56. DmDdStringDomain | 3-23 |
| Table 3-57. DmDdStringInstrumentChar | 3-23 |
| Table 3-58. DmDdStringPlatformChar | 3-23 |
| Table 3-59. DmDdStringSensorChar | 3-24 |
| Table 3-60. DmDdStringType | 3-24 |
| Table 3-61. DmDdTemporal | 3-24 |
| Table 3-62. DmDdTemporalKeywordClass | 3-25 |
| Table 3-63. DmDdValidsMapping | 3-25 |
| Table 3-64. EcDbVersions | 3-25 |
| Table 3-65. View List | 3-53 |
| Table 3-66. Dependencies on Table: DmDdCollECAttributeXref | 3-55 |
| Table 3-67. Dependencies on Table: DmDdECSCollection | 3-55 |
| Table 3-68. Dependencies on Table: DmDdECSCollKeywordXref | 3-56 |
| Table 3-69. Dependencies on Table: DmDdECSDiscipline | 3-56 |
| Table 3-70. Dependencies on Table: DmDdECSParameterDetails | 3-56 |
| Table 3-71. Dependencies on Table: DmDdECSTerm | 3-57 |
| Table 3-72. Dependencies on Table: DmDdECSTopic | 3-57 |
| Table 3-73. Dependencies on Table: DmDdECSVariable | 3-57 |

| | |
|---|-------|
| Table 3-74. Dependencies on Table: DmDdEquivalentAttributes | 3-57 |
| Table 3-75. Dependencies on Table: DmDdGroup | 3-57 |
| Table 3-76. Dependencies on Table: DmDdInfoMgr | 3-58 |
| Table 3-77. Dependencies on Table: DmDdInstrument | 3-58 |
| Table 3-78. Dependencies on Table: DmDdInstrumentCharacteristic | 3-58 |
| Table 3-79. Dependencies on Table: DmDdMetadataLevel..... | 3-58 |
| Table 3-80. Dependencies on Table: DmDdMultipleCollection | 3-59 |
| Table 3-81. Dependencies on Table: DmDdPlatform..... | 3-59 |
| Table 3-82. Dependencies on Table: DmDdPlatformCharacteristic | 3-59 |
| Table 3-83. Dependencies on Table: DmDdSensor..... | 3-59 |
| Table 3-84. Dependencies on Table: DmDdSensorCharacteristic..... | 3-60 |
| Table 3-85. Dependencies on Table: DmDdSingleTypeCollection..... | 3-60 |
| Table 3-86. Dependencies on Table: DmDdStringDomain | 3-60 |
| Table 3-87. Dependencies on Table: DmDdStringType..... | 3-60 |
| Table 3-88. Dependencies on Table: DmDdTemporal | 3-61 |
| Table 3-89. Trigger Descriptions..... | 3-61 |
| Table 3-90. Summary List of Stored Procedures..... | 3-86 |
| Table 3-91. Flat File Descriptions..... | 3-132 |
| Table 3-92. Flat File Field Specifications..... | 3-136 |
| Table 4-1. Index Type Key | 4-1 |
| Table 4-2. Index List..... | 4-2 |
| Table 4-2. Segment Descriptions..... | 4-5 |
| Table 5-1. Permission Key..... | 5-3 |
| Table 5-2. Object Permissions | 5-4 |
| Table 6-1. Installation Scripts | 6-1 |
| Table 6-2. De-Installation Scripts | 6-1 |
| Table 6-3. Backup and Recovery Scripts..... | 6-2 |
| Table 6-4. Miscellaneous Scripts and Input Data Files | 6-2 |

Appendix A. Data Management Subsystem

Entity Relationship Diagrams

Abbreviations and Acronyms

This page intentionally left blank

1. Introduction

1.1 Identification

This Data Management (DM) Subsystem Database Design and Database Schema Specifications document, Contract Data Requirement List (CDRL) Item Number 050, whose requirements are specified in Data Item Description (DID) 311/DV2, is a required deliverable under the Earth Observing System (EOS) Data and Information System (EOSDIS) Core System (ECS), Contract NAS5-60000.

1.2 Scope

The DM Subsystem Database Design and Database Schema Specifications document describes the database that supports data requirements for the DM Subsystem, Release 5A.

1.3 Purpose

The purpose of the DM Subsystem Database Design and Database Schema Specifications document is to support the administrators of the DM Subsystem database throughout its life-cycle. Additionally, this document communicates the database specifications in sufficient detail to support other ongoing installation and operational activities (e.g., configuration management, data administration, system installation and maintenance.)

1.4 Audience

The DM Subsystem Database Design and Database Schema Specifications document is intended to be used and maintained by the ECS maintenance and operations staff. The document is organized as follows:

Section 1 provides information regarding the identification, purpose, scope, and audience.

Section 2 provides a listing of related documents used to develop this document.

Section 3 contains an overview of the database design, including the entity relationship diagram (ERD) representing the physical data model, the database tables and columns, flat files and fields, triggers, and stored procedures.

Section 4 provides a description of database performance and tuning features, i.e., indexes, caches, and data segments for the DM Subsystem database implementation.

Section 5 provides a high level description of the preliminary security infrastructure including listings of anticipated users, groups, and permissions expected for preliminary operational use.

Section 6 provides listings of the scripts used for database installation, de-installation, backup and recovery, and other miscellaneous administration functions.

2. Related Documents

2.1 Applicable Documents

The following documents, including Internet links, are referenced in this document, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

| | |
|--------------|---|
| 305-CD-500 | Release 5A Segment Design Specification for the ECS Project |
| 920-TDG-009 | DAAC Hardware Database Mapping/GSFC |
| 920-TDN- 009 | DAAC Hardware Database Mapping/NSIDC |
| 920-TDE-009 | DAAC Hardware Database Mapping/EDC |
| 920-TDL-009 | DAAC Hardware Database Mapping/LARC |
| 920-TDS-009 | DAAC Hardware Database Mapping/SMC |
| 920-TDG-010 | DAAC Database Configuration/GSFC |
| 920-TDN-010 | DAAC Database Configuration/NSIDC |
| 920-TDE-010 | DAAC Database Configuration/EDC |
| 920-TDL-010 | DAAC Database Configuration/LARC |
| 920-TDS-010 | DAAC Database Configuration/SMC |
| 920-TDG-011 | DAAC Sybase Log Mapping/GSFC |
| 920-TDN-011 | DAAC Sybase Log Mapping/NSIDC |
| 920-TDE-011 | DAAC Sybase Log Mapping/EDC |
| 920-TDL-011 | DAAC Sybase Log Mapping/LARC |
| 920-TDS-011 | DAAC Sybase Log Mapping/SMC |
| 922-TDG-013 | Disk Partitions/GSFC |
| 922-TDN-013 | Disk Partitions/NSIDC |
| 922-TDL-013 | Disk Partitions/LARC |
| 922-TDS-013 | Disk Partitions/SMC |

These documents are maintained as part of the ECS baseline and available on the World Wide Web at the URL: <http://cmdm.east.hitc.com/baseline>. Please note that this is a partial mirror site in that some items are not available (they are identified) since this is OPEN to all. This site may also be reached through the EDHS homepage. Scroll page to the connections line and click on the ECS Baseline Information System link.

2.2 Information Documents

The following documents, although not directly applicable, amplify or clarify the information presented in this document. These documents are not binding on this document.

| | |
|------------|---|
| 313-CD-500 | Release 5A CSMS/SDPS Internal ICD for the ECS Project |
| 609-CD-500 | Release 5A Operations Tools Manual for the ECS Project |
| 611-CD-500 | Release 5A Mission Operation Procedures for the ECS Project |

These documents are accessible via the EDHS homepage.

3. Database Design

3.1 Design Overview

Data requirements for DM fall into 4 categories:

attribute/term definitions – definitions and glossary listings for attributes, acronyms, terms,

collection metadata – descriptive information on science collection housed in ECS,

information management – data used to facilitate local and distributed information management administration.

database schema versioning - descriptive information on current version of the database.

The DM Subsystem database schema implements a majority of the persistent data requirements for the DM Subsystem. Other non-database data requirements, used for system support, are implemented in flat files—see Section 4.2 for descriptions of these flat files. The database is designed to satisfy DM Subsystem business rules while maintaining data integrity, consistency, and performance. DM Subsystem database tables are implemented using the Sybase Relational Database Management System (RDBMS). All components of the DM Subsystem database are described in the following sections; information is presented in sufficient detail to support operational needs.

3.1.1 Physical Data Model Entity Relationship Diagram

An entity relationship diagram (ERD) was developed for use as a “roadmap” to the DM Subsystem database. An ERD is a schematic of the physical data structure which illustrates the dependencies and relationships between database entities, i.e., tables. On ERDs, database entities are represented by rectangles and relationships are represented by arrows as shown by the key in Figure 3-1. Details on the syntax used by the *S-Designor Data Architect* Computer Aided Software Engineering (CASE) tool may be found in the *Powersoft: S-Designor for PowerBuilder* Reference Guide. The ERD presented in Figure 3-2 for the DM Subsystem database was produced using the *S-Designor* tool.

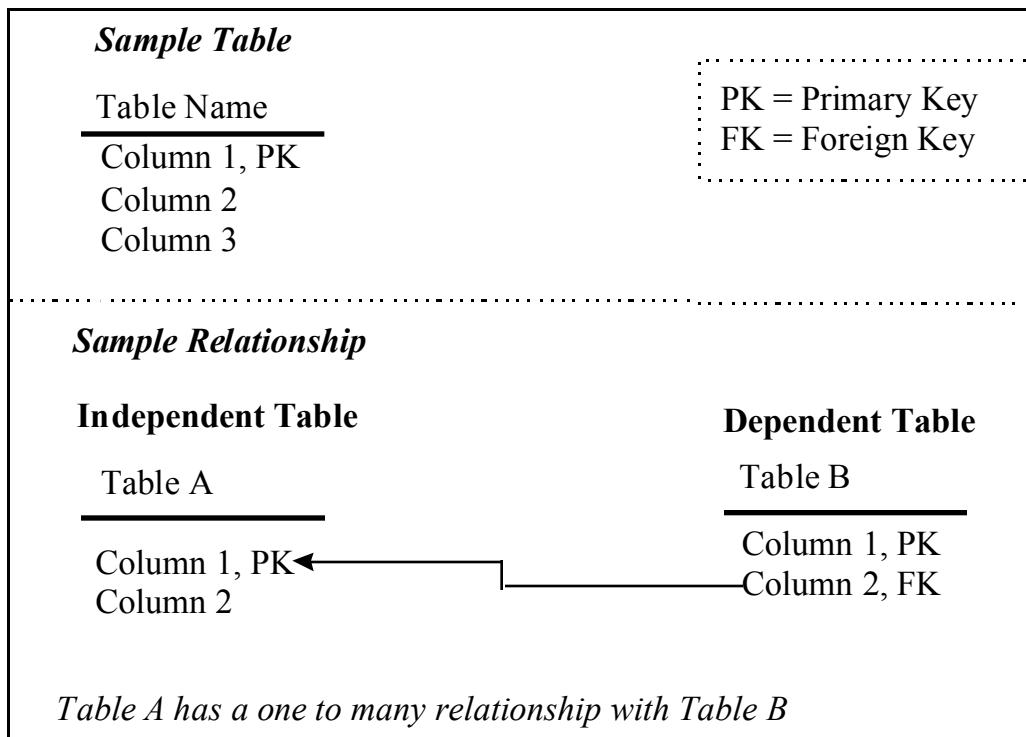


Figure 3-1. ERD Key

3.1.2 Database Table Specifications

The following report is produced by the S-Designer CASE tool and edited for format. The report provides specifications on the DM Subsystem database tables. The report is sorted in alphabetical order by table name. Specifications include the table name, a brief description of the table, and the columns comprising the table. The order of the tables presented herein correspond to the order in the list of tables in Table 3-1 above. The column information includes the column name and the column attributes, i.e., type (format of the data stored within the database), primary key indicator(s), and a mandatory indicator for determining if the column must contain data when the row exists. In some cases the content of the column specification “Type” will reference a domain value (refer to Section 4.1.4 for more information on the domain values).

Table 3-1. Database Tables (1 of 2)

| Table Name | Logical Grouping |
|--------------------------|----------------------------|
| DmDdAcronym | Attribute/Term Definitions |
| DmDdAdditionalAttributes | Collection Metadata |
| DmDdAttributeXref | Collection Metadata |
| DmDdBoundingRectangle | Collection Metadata |
| DmDdColIECSAttributeXref | Collection Metadata |
| DmDdCollectionXref | Collection Metadata |
| DmDdDateInstrumentChar | Collection Metadata |
| DmDdDatePlatformChar | Collection Metadata |
| DmDdDateSensorChar | Collection Metadata |
| DmDdDateTimeDomain | Attribute/Term Definitions |
| DmDdECSAttributes | Attribute/Term Definitions |
| DmDdECSCollection | Collection Metadata |
| DmDdECSCollKeywordXref | Collection Metadata |
| DmDdECSDiscipline | Collection Metadata |
| DmDdECSParameterDetails | Collection Metadata |
| DmDdECSTerm | Collection Metadata |
| DmDdECSTopic | Collection Metadata |
| DmDdECSVariable | Collection Metadata |
| DmDdEquivalentAttributes | Attribute/Term Definitions |
| DmDdFloatInstrumentChar | Collection Metadata |
| DmDdFloatPlatformChar | Collection Metadata |
| DmDdFloatSensorChar | Collection Metadata |
| DmDdGlossary | Attribute/Term Definitions |
| DmDdGroup | Information Management |
| DmDdGroupXref | Information Management |
| DmDdInfoMgr | Information Management |

Table 3-1. Database Tables (2 of 2)

| Table Name | Logical Grouping |
|------------------------------|----------------------------|
| DmDdInfoMgrCollXref | Information Management |
| DmDdInfoMgrXref | Information Management |
| DmDdInstrument | Collection Metadata |
| DmDdInstrumentCharacteristic | Collection Metadata |
| DmDdInstrumentPlatformXref | Collection Metadata |
| DmDdInstrumentXref | Collection Metadata |
| DmDdIntInstrumentChar | Collection Metadata |
| DmDdIntPlatformChar | Collection Metadata |
| DmDdIntSensorChar | Collection Metadata |
| DmDdKeywordAliasXref | Attribute/Term Definitions |
| DmDdKeywordParameterXref | Collection Metadata |
| DmDdLevelGroupXref | Information Management |
| DmDdMetadataLevel | Collection Metadata |
| DmDdMultipleCollection | Collection Metadata |
| DmDdNumericDomain | Attribute/Term Definitions |
| DmDdOperationModeClass | Collection Metadata |
| DmDdPlatform | Collection Metadata |
| DmDdPlatformCharacteristic | Collection Metadata |
| DmDdPlatformXref | Collection Metadata |
| DmDdRangeDateTime | Collection Metadata |
| DmDdSensor | Collection Metadata |
| DmDdSensorCharacteristic | Collection Metadata |
| DmDdSensorInstrumentXref | Collection Metadata |
| DmDdSensorXref | Collection Metadata |
| DmDdSingleTypeCollection | Collection Metadata |
| DmDdSite | Information Management |
| DmDdSpatialDomain | Collection Metadata |
| DmDdSpatialKeywordClass | Collection Metadata |
| DmDdStringDomain | Attribute/Term Definitions |
| DmDdStringInstrumentChar | Collection Metadata |
| DmDdStringPlatformChar | Collection Metadata |
| DmDdStringSensorChar | Collection Metadata |
| DmDdStringType | Attribute/Term Definitions |
| DmDdTemporal | Collection Metadata |
| DmDdTemporalKeywordClass | Collection Metadata |
| DmDdValidsMapping | Attribute/Term Definitions |
| EcDbVersions | Database Schema Versioning |

Table 3-2. DmDdAcronym

Description: This table lists all the acronyms that exist within ECS.

Column List:

| Name | Code | Type | P | M |
|--------------------|--------------------|----------|-----|-----|
| acronymDescription | acronymDescription | text | No | No |
| acronymName | acronymName | char(15) | Yes | Yes |

Table 3-3. DmDdAdditionalAttributes

Description: This table identifies product specific attributes.

Column List:

| Name | Code | Type | P | M |
|--------------------------------|--------------------------------|--------------|-----|-----|
| AdditionalAttributeDataType | AdditionalAttributeDataType | char(10) | No | No |
| AdditionalAttributeDescription | AdditionalAttributeDescription | varchar(255) | No | No |
| AdditionalAttributeName | AdditionalAttributeName | varchar(255) | No | Yes |
| attributeId | attributeId | int | Yes | Yes |
| attributeLevelId | attributeLevelId | char(4) | No | No |
| attributeSize | attributeSize | int | No | No |
| collectionId | collectionId | int | No | Yes |
| searchable | searchable | numeric(1) | No | No |
| siteId | siteId | int | Yes | Yes |

Table 3-4. DmDdAttributeXref

Description: This is a cross reference table among, attributes, collections and site references.

Column List:

| Name | Code | Type | P | M |
|-----------------|-----------------|------|-----|-----|
| AttributeId | attributeId | int | Yes | Yes |
| AttributeIdRef | attributeIdRef | int | Yes | Yes |
| CollectionId | collectionId | int | No | Yes |
| CollectionIdRef | collectionIdRef | int | No | Yes |
| SiteId | siteId | int | Yes | Yes |
| SiteIdRef | siteIdRef | int | Yes | Yes |

Table 3-5. DmDdBoundingRectangle

Description: This table contains area coverage for ECS collections. This area coverage is expressed by latitude and longitude values in the order western, eastern, northern, and southernmost. For data sets that include a complete band of latitude around the Earth, the west coordinate = -180.0 and east coordinate = 180.0. Latitude values range from -90 to +90.

Column List:

| Name | Code | Type | P | M |
|-------------------------|-------------------------|-------|-----|-----|
| collectionId | collectionId | int | Yes | Yes |
| EastBoundingCoordinate | EastBoundingCoordinate | float | Yes | Yes |
| NorthBoundingCoordinate | NorthBoundingCoordinate | float | Yes | Yes |
| siteId | siteId | int | Yes | Yes |
| SouthBoundingCoordinate | SouthBoundingCoordinate | float | Yes | Yes |
| WestBoundingCoordinate | WestBoundingCoordinate | float | Yes | Yes |

Table 3-6. DmDdColIECSAttributeXref

Description: This table is a cross reference between the ECS attributes and collections.

Column List:

| Name | Code | Type | P | M |
|------------------|------------------|--------------|-----|-----|
| attributeId | attributeId | int | Yes | Yes |
| attributeLevelId | attributeLevelId | char(4) | No | No |
| collectionId | collectionId | int | No | Yes |
| ECSAttributeName | ECSAttributeName | char(50) | No | Yes |
| qualifiedGroup | qualifiedGroup | varchar(255) | No | No |
| siteId | siteId | int | Yes | Yes |

Table 3-7. DmDdCollectionXref

Description: This is a cross reference table between the collection and sites.

Column List:

| Name | Code | Type | P | M |
|-----------------|-----------------|------|-----|-----|
| collectionIdAgg | collectionIdAgg | int | Yes | Yes |
| collectionIdRef | collectionIdRef | int | Yes | Yes |
| siteIdAgg | siteIdAgg | int | Yes | Yes |
| siteIdRef | siteIdRef | int | Yes | Yes |

Table 3-8. DmDdDateInstrumentChar

Description: This holds the instrument characteristics by date.

Column List:

| Name | Code | Type | P | M |
|------------------------------|------------------------------|----------|-----|-----|
| DateInstrumentCharValue | DateInstrumentCharValue | datetime | No | No |
| InstrumentCharacteristicName | InstrumentCharacteristicName | char(40) | Yes | Yes |

Table 3-9. DmDdDatePlatformChar

Description: This table holds the platform characteristics by date.

Column List:

| Name | Code | Type | P | M |
|----------------------------|----------------------------|----------|-----|-----|
| DatePlatformCharValue | DatePlatformCharValue | datetime | No | No |
| PlatformCharacteristicName | PlatformCharacteristicName | char(40) | Yes | Yes |

Table 3-10. DmDdDateSensorChar

Description: This table holds the sensor characteristic by date.

Column List:

| Name | Code | Type | P | M |
|--------------------------|--------------------------|----------|-----|-----|
| DateSensorCharValue | DateSensorCharValue | datetime | No | No |
| SensorCharacteristicName | SensorCharacteristicName | char(40) | Yes | Yes |

Table 3-11. DmDdDateTimeDomain

Description: This table holds the date and time domain that a collection can have.

Column List:

| Name | Code | Type | P | M |
|--------------|--------------|-------------|-----|-----|
| attributeId | attributeId | int | Yes | Yes |
| collectionId | collectionId | int | No | Yes |
| EndDateTime | EndDateTime | varchar(32) | No | No |
| siteId | siteId | int | Yes | Yes |
| StartTime | StartTime | varchar(32) | No | Yes |

Table 3-12. DmDdECSAttributes

Description: This table holds the ECS attributes.

Column List:

| Name | Code | Type | P | M |
|----------------------|----------------------|--------------|-----|-----|
| attributeDataType | attributeDataType | char(1) | No | No |
| attributeDescription | attributeDescription | varchar(255) | No | No |
| attributeSize | attributeSize | int | No | No |
| ECSAttributeName | ECSAttributeName | char(50) | Yes | Yes |
| searchable | searchable | numeric(1) | No | No |

Table 3-13. DmDdECSCollection (1 of 2)

Description: This table provides further description of the collection to include media, revision date, usage, and processing and archive centers. It is associated with many other collection level descriptive tables.

Column List:

| Name | Code | Type | P | M |
|---------------|---------------|--------------|-----|-----|
| ArchiveCenter | ArchiveCenter | char(20) | No | Yes |
| collectionId | collectionId | int | Yes | Yes |
| collectionURL | collectionURL | varchar(100) | No | No |

Table 3-13. DmDdECSCollection (2- of 2)

Column List:

| Name | Code | Type | P | M |
|--------------------|--------------------|--------------|-----|-----|
| Description | Description | varchar(255) | No | No |
| gcmdEntryId | gcmdEntryId | char(32) | No | No |
| LongName | LongName | char(80) | No | Yes |
| ProcessingCenter | ProcessingCenter | char(20) | No | No |
| RevisionDate | RevisionDate | datetime | No | No |
| ShortName | ShortName | char(8) | No | Yes |
| siteId | siteId | int | Yes | Yes |
| SuggestedUsage | SuggestedUsage | text | No | No |
| type | type | varchar(50) | No | No |
| VersionDescription | VersionDescription | varchar(255) | No | No |
| VersionID | VersionID | int | No | Yes |

Table 3-14. DmDdECSCollKeywordXref

Description: This is a cross reference table between Collection and Keyword.

Column List:

| Name | Code | Type | P | M |
|----------------------|----------------------|----------|-----|-----|
| collectionId | collectionId | int | No | Yes |
| ECSDisciplineKeyword | ECSDisciplineKeyword | char(24) | No | No |
| ECSTermKeyword | ECSTermKeyword | char(50) | No | No |
| ECSTopicKeyword | ECSTopicKeyword | char(32) | No | No |
| ECSVariableKeyword | ECSVariableKeyword | char(80) | No | No |
| keywordId | keywordId | int | Yes | Yes |
| siteId | siteId | int | Yes | Yes |

Table 3-15. DmDdECSDiscipline

Description: This table provides the discipline keyword associated with a collection.

Column List:

| Name | Code | Type | P | M |
|-----------------------|-----------------------|--------------|-----|-----|
| disciplineDescription | disciplineDescription | varchar(255) | No | No |
| ECSDisciplineKeyword | ECSDisciplineKeyword | char(24) | Yes | Yes |

Table 3-16. DmDdECSPparameterDetails

Description: This table is used to provide further information about the physical or geophysical parameters specified in the DmDdAdditionalAttributes. It contains the units of measurement, range, accuracy, explanation, and resolution.

Column List:

| Name | Code | Type | P | M |
|--------------------------------|--------------------------------|--------------|-----|-----|
| ECSParameterKeyword | ECSParameterKeyword | varchar(80) | Yes | Yes |
| ParameterMeasurementResolution | ParameterMeasurementResolution | char(30) | No | No |
| ParameterRangeBegin | ParameterRangeBegin | varchar(40) | No | No |
| ParameterRangeEnd | ParameterRangeEnd | varchar(40) | No | No |
| ParameterUnitsOfMeasurement | ParameterUnitsOfMeasurement | char(20) | No | No |
| ParameterValueAccuracy | ParameterValueAccuracy | char(30) | No | No |
| ParameterValueAccuracyExplanat | ParameterValueAccuracyExplanat | varchar(255) | No | No |

Table 3-17. DmDdECSTerm

Description: This table contains the term keyword(s) associated with the collection. (e.g., atmospheric temperature, precipitation, soils, sea ice).

Column List:

| Name | Code | Type | P | M |
|-----------------|-----------------|--------------|-----|-----|
| ECSTermKeyword | ECSTermKeyword | char(50) | Yes | Yes |
| termDescription | termDescription | varchar(255) | No | No |

Table 3-18. DmDdECSTopic

Description: This table contains the topic keyword(s) associated with the collection.(e.g., atmospheric science, hydrosphere, land surface, ocean science).

Column List:

| Name | Code | Type | P | M |
|------------------|------------------|--------------|-----|-----|
| ECSTopicKeyword | ECSTopicKeyword | char(32) | Yes | Yes |
| topicDescription | topicDescription | varchar(255) | No | No |

Table 3-19. DmDdECSVariable

Description: This table contains the variable keyword(s) associated with the collection. (e.g., upper troposphere temperature, precipitable water, soil depth, albedo).

Column List:

| Name | Code | Type | P | M |
|---|---|--------------------------|-----------|-----------|
| ECSVariableKeyword variableDescription | ECSVariableKeyword variableDescription | char(80) varchar(255) | Yes No | Yes No |

Table 3-20. DmDdEquivalentAttributes

Description: This table holds extra information for equivalent attributes found in ECS.

Column List:

| Name | Code | Type | P | M |
|--------------------------------|--------------------------------|--------------|-----|-----|
| attributeId | attributeId | int | Yes | Yes |
| attributeLevelId | attributeLevelId | char(4) | No | No |
| attributeSize | attributeSize | int | No | No |
| collectionId | collectionId | int | No | Yes |
| equivalentAttributeDataType | equivalentAttributeDataType | char(10) | No | No |
| equivalentAttributeDescription | equivalentAttributeDescription | varchar(255) | No | No |
| equivalentAttributeName | equivalentAttributeName | varchar(255) | No | Yes |
| qualifiedGroup | qualifiedGroup | varchar(255) | No | No |
| searchable | searchable | numeric(1) | No | No |
| siteId | siteId | int | Yes | Yes |

Table 3-21. DmDdFloatInstrumentChar

Description: This table holds information for the instrument characteristics that have float as a data type.

Column List:

| Name | Code | Type | P | M |
|------------------------------|------------------------------|----------|-----|-----|
| FloatInstrumentCharValue | FloatInstrumentCharValue | float | No | No |
| InstrumentCharacteristicName | InstrumentCharacteristicName | char(40) | Yes | Yes |

Table 3-22. DmDdFloatPlatformChar

Description: This table holds information for the platform characteristics that have float as a data type.

Column List:

| Name | Code | Type | P | M |
|----------------------------|----------------------------|----------|-----|-----|
| FloatPlatformCharValue | FloatPlatformCharValue | float | No | No |
| PlatformCharacteristicName | PlatformCharacteristicName | char(40) | Yes | Yes |

Table 3-23. DmDdFloatSensorChar

Description: This table holds information for the sensor characteristics that have float as a data type.

Column List:

| Name | Code | Type | P | M |
|--------------------------|--------------------------|----------|-----|-----|
| FloatSensorCharValue | FloatSensorCharValue | float | No | No |
| SensorCharacteristicName | SensorCharacteristicName | char(40) | Yes | Yes |

Table 3-24. DmDdGlossary

Description: This holds the glossary information of the ECS.

Column List:

| Name | Code | Type | P | M |
|---------------------|---------------------|----------|-----|-----|
| GlossaryDescription | GlossaryDescription | text | No | No |
| GlossaryName | GlossaryName | char(80) | Yes | Yes |

Table 3-25. DmDdGroup

Description: This table holds the group names and descriptions within the ESDT.

Column List:

| Name | Code | Type | P | M |
|------------------|------------------|--------------|-----|-----|
| groupDescription | groupDescription | varchar(255) | No | No |
| groupName | groupName | char(40) | Yes | Yes |

Table 3-26. DmDdGroupXref

Description: This table shows the relationship between the groups.

Column List:

| Name | Code | Type | P | M |
|-----------------|-----------------|----------|-----|-----|
| groupName | groupName | char(40) | Yes | Yes |
| groupParentName | groupParentName | char(40) | Yes | Yes |

Table 3-27. DmDdInfoMgr

Description: This table holds the list of information managers on each DAAC

Column List:

| Name | Code | Type | P | M |
|-------------|-------------|--------------|-----|-----|
| infoMgrDesc | infoMgrDesc | varchar(255) | No | No |
| infoMgrName | infoMgrName | char(20) | Yes | Yes |
| infoMgrType | infoMgrType | char(20) | No | No |
| infoMgrUR | infoMgrUR | varchar(255) | No | Yes |

Table 3-28. DmDdInfoMgrCollXref

Description: This table is a cross reference between InfoMgr and Collection.

Column List:

| Name | Code | Type | P | M |
|--------------|--------------|----------|-----|-----|
| collectionId | collectionId | int | Yes | Yes |
| infoMgrName | infoMgrName | char(20) | Yes | Yes |
| siteId | siteId | int | Yes | Yes |

Table 3-29. DmDdInfoMgrXref

Description: This table shows the relationship between the InfoMgr.

Column List:

| Name | Code | Type | P | M |
|-------------------|-------------------|----------|-----|-----|
| infoMgrName | infoMgrName | char(20) | Yes | Yes |
| infoMgrParentName | infoMgrParentName | char(20) | Yes | Yes |

Table 3-30. DmDdlInstrument

Description: This class defines the device used to measure or record data, including direct human observation. Included in this class are defined EOS Instruments. In cases where instruments have a single sensor or the instrument and sensor are used sysnomously (e.g. AVHRR) the both Instrument and sensor should be recorded.

Column List:

| Name | Code | Type | P | M |
|-----------------------|-----------------------|-------------|-----|-----|
| instrumentDescription | instrumentDescription | varchar(80) | No | No |
| InstrumentLongName | InstrumentLongName | varchar(80) | No | No |
| InstrumentShortName | InstrumentShortName | char(20) | Yes | Yes |
| InstrumentTechnique | InstrumentTechnique | char(30) | No | No |
| NumOfSensors | NumOfSensors | smallint | No | No |

Table 3-31. DmDdlInstrumentCharacteristic

Description: This class is used to define the characteristics of instrument specific attributes. It should not be used to define attributes of new objects.

Column List:

| Name | Code | Type | P | M |
|------------------------------|------------------------------|-------------|-----|-----|
| InstrumentCharacteristicDesc | InstrumentCharacteristicDesc | varchar(40) | No | No |
| InstrumentCharacteristicName | InstrumentCharacteristicName | char(40) | Yes | Yes |
| InstrumentCharacteristicUnit | InstrumentCharacteristicUnit | char(20) | No | No |
| InstrumentCharDataType | InstrumentCharDataType | char(8) | No | No |
| InstrumentShortName | InstrumentShortName | char(20) | No | No |

Table 3-32. DmDdlInstrumentPlatformXref

Description: This is a cross reference table between instrument and platform.

Column List:

| Name | Code | Type | P | M |
|---------------------|---------------------|----------|-----|-----|
| InstrumentShortName | InstrumentShortName | char(20) | Yes | Yes |
| PlatformShortName | PlatformShortName | char(20) | Yes | Yes |

Table 3-33. DmDdInstrumentXref

Description: This is a cross reference table between instrument and collection.

Column List:

| Name | Code | Type | P | M |
|---------------------|---------------------|----------|-----|-----|
| collectionId | collectionId | int | Yes | Yes |
| InstrumentShortName | InstrumentShortName | char(20) | Yes | Yes |
| siteId | siteId | int | Yes | Yes |

Table 3-34. DmDdIntInstrumentChar

Description: This table holds information for the instrument characteristics that have integer as a data type.

Column List:

| Name | Code | Type | P | M |
|------------------------------|------------------------------|----------|-----|-----|
| InstrumentCharacteristicName | InstrumentCharacteristicName | char(40) | Yes | Yes |
| IntInstrumentCharValue | IntInstrumentCharValue | int | No | No |

Table 3-35. DmDdIntPlatformChar

Description: This table holds information for the platform characteristics that have integer as a data type.

Column List:

| Name | Code | Type | P | M |
|--------------------------------|--------------------------------|----------|-----|-----|
| IntPlatformCharacteristicValue | IntPlatformCharacteristicValue | int | No | No |
| PlatformCharacteristicName | PlatformCharacteristicName | char(40) | Yes | Yes |

Table 3-36. DmDdIntSensorChar

Description: This table holds information for the sensor characteristics that have integer as a data type.

Column List:

| Name | Code | Type | P | M |
|--------------------------|--------------------------|----------|-----|-----|
| IntSensorCharValue | IntSensorCharValue | int | No | No |
| SensorCharacteristicName | SensorCharacteristicName | char(40) | Yes | Yes |

Table 3-37. DmDdKeywordAliasXref

Description: This table holds the aliases for keywords.

Column List:

| Name | Code | Type | P | M |
|-----------------|-----------------|-------------|-----|-----|
| attributeId | attributeId | int | Yes | Yes |
| attributeIdRef | attributeIdRef | int | Yes | Yes |
| collectionId | collectionId | int | No | Yes |
| collectionIdRef | collectionIdRef | int | No | Yes |
| keywordName | keywordName | varchar(80) | Yes | Yes |
| keywordNameRef | keywordNameRef | varchar(80) | Yes | Yes |
| siteId | siteId | int | Yes | Yes |
| siteIdRef | siteIdRef | int | Yes | Yes |

Table 3-38. DmDdKeywordParameterXref

Description: This is a cross reference table between ECS keywords parameters and the DDICT parameter keywords.

Column List:

| Name | Code | Type | P | M |
|---------------------|---------------------|-------------|-----|-----|
| ECSParameterKeyword | ECSParameterKeyword | varchar(80) | Yes | Yes |
| keywordId | keywordId | int | Yes | Yes |
| siteId | siteId | int | Yes | Yes |

Table 3-39. DmDdLevelGroupXref

Description: This table is the cross reference that shows the relationship of groups and levels.

Column List:

| Name | Code | Type | P | M |
|-----------|-----------|----------|-----|-----|
| groupName | groupName | char(40) | Yes | Yes |
| levelId | levelId | char(4) | Yes | Yes |

Table 3-40. DmDdMetadataLevel

Description: This table defines the level that an attribute appears in for collections and granules.

Column List:

| Name | Code | Type | P | M |
|------------------|------------------|--------------|-----|-----|
| levelDescription | levelDescription | varchar(255) | No | No |
| levelId | levelId | char(4) | Yes | Yes |
| levelName | levelName | char(32) | No | No |

Table 3-41. DmDdMultipleCollection

Description: This table holds the multiple collection information.

Column List:

| Name | Code | Type | P | M |
|-------------------------|-------------------------|----------|-----|-----|
| AggregationRelationship | AggregationRelationship | char(2) | No | No |
| AggregationType | AggregationType | char(20) | No | No |
| AggregationValue | AggregationValue | char(80) | No | No |
| collectionId | collectionId | int | Yes | Yes |
| siteId | siteId | int | Yes | Yes |

Table 3-42. DmDdNumericDomain

Description: This table holds the numeric domain for a collection.

Column List:

| Name | Code | Type | P | M |
|-----------------------|-----------------------|-------------|-----|-----|
| accuracy | accuracy | varchar(50) | No | No |
| accuracyExplanation | accuracyExplanation | varchar(80) | No | No |
| attributeId | attributeId | int | Yes | Yes |
| collectionId | collectionId | int | No | Yes |
| measurementResolution | measurementResolution | varchar(50) | No | No |
| numericDomainRule | numericDomainRule | varchar(50) | No | Yes |
| numericPrecision | numericPrecision | float | No | No |
| siteId | siteId | int | Yes | Yes |
| units | units | char(30) | No | No |

Table 3-43. DmDdOperationModeClass

Description: This table contains the mode of operation for the instrument.

Column List:

| Name | Code | Type | P | M |
|---------------------|---------------------|----------|-----|-----|
| InstrumentShortName | InstrumentShortName | char(20) | Yes | Yes |
| OperationMode | OperationMode | char(20) | Yes | Yes |

Table 3-44. DmDdPlatform

Description: This class describes the relevant platforms associated with the acquisition of the collection or granule. Platform types include Spacecraft, Aircraft, Vessel, Buoy, Platform, Station, Network or Human. In cases where Human is the platform type it should be of scientific relevancy to the collection. If an instrument is hand held and that is relevant to the collection of the data then PlatformType=Human. In cases where an instrument is hand-held but the human is associated with another platform then all relevant platforms should be associated with the collection. Humans can be both Platforms and Instruments (e.g. if a human is standing on the ground and makes a visual observation then: PlatformType=Human, Instrument=HumanObservation, SensorShortName=HumanVisual).

Column List:

| Name | Code | Type | P | M |
|---------------------|---------------------|-------------|-----|-----|
| platformDescription | platformDescription | varchar(80) | No | No |
| PlatformLongName | PlatformLongName | varchar(80) | No | No |
| PlatformShortName | PlatformShortName | char(20) | Yes | Yes |
| PlatformType | PlatformType | char(20) | No | No |

Table 3-45. DmDdPlatformCharacteristic

Description: This class is used to define the characteristics of platform specific attributes. It is not intended to be used to define attributes of new objects.

Column List:

| Name | Code | Type | P | M |
|--------------------------------|--------------------------------|-------------|-----|-----|
| PlatformCharacteristicDataType | PlatformCharacteristicDataType | char(8) | No | No |
| PlatformCharacteristicDesc | PlatformCharacteristicDesc | varchar(40) | No | No |
| PlatformCharacteristicName | PlatformCharacteristicName | char(40) | Yes | Yes |
| PlatformCharacteristicUnit | PlatformCharacteristicUnit | char(20) | No | No |
| PlatformShortName | PlatformShortName | char(20) | No | No |

Table 3-46. DmDdPlatformXref

Description: This is cross reference table between platform and collection.

Column List:

| Name | Code | Type | P | M |
|-------------------|-------------------|----------|-----|-----|
| collectionId | collectionId | int | Yes | Yes |
| PlatformShortName | PlatformShortName | char(20) | Yes | Yes |
| siteId | siteId | int | Yes | Yes |

Table 3-47. DmDdRangeDateTime

Description: This class specifies the start and end date and time of granules and collections.

Column List:

| Name | Code | Type | P | M |
|--------------------|--------------------|-------------|-----|-----|
| collectionId | collectionId | int | Yes | Yes |
| RangeBeginningDate | RangeBeginningDate | datetime | Yes | Yes |
| RangeBeginningTime | RangeBeginningTime | varchar(32) | Yes | Yes |
| RangeEndingDate | RangeEndingDate | datetime | No | No |
| RangeEndingTime | RangeEndingTime | varchar(32) | No | No |
| siteId | siteId | int | Yes | Yes |

Table 3-48. DmDdSensor

Description: This class is used to describe sensory subcomponents of an instrument. In cases where instruments have a single sensor or the Instrument and Sensor are used synonomously (e.g. AVHRR) both the Instrument and Sensor are recorded.

Column List:

| Name | Code | Type | P | M |
|-------------------|-------------------|-------------|-----|-----|
| sensorDescription | sensorDescription | varchar(80) | No | No |
| SensorLongName | SensorLongName | varchar(80) | No | No |
| SensorShortName | SensorShortName | char(20) | Yes | Yes |
| SensorTechnique | SensorTechnique | char(40) | No | No |

Table 3-49. DmDdSensorCharacteristic

Description: This class is used to define the characteristics of sensor specific attributes. It is not intended to be used to define attributes of new objects.

Column List:

| Name | Code | Type | P | M |
|------------------------------|------------------------------|-------------|-----|-----|
| SensorCharacteristicDataType | SensorCharacteristicDataType | char(8) | No | No |
| SensorCharacteristicDesc | SensorCharacteristicDesc | varchar(40) | No | No |
| SensorCharacteristicName | SensorCharacteristicName | char(40) | Yes | Yes |
| SensorCharacteristicUnit | SensorCharacteristicUnit | char(20) | No | No |
| SensorShortName | SensorShortName | char(20) | No | No |

Table 3-50. DmDdSensorInstrumentXref

Description: This is a cross reference table between sensors and instruments.

Column List:

| Name | Code | Type | P | M |
|---------------------|---------------------|----------|-----|-----|
| InstrumentShortName | InstrumentShortName | char(20) | Yes | Yes |
| SensorShortName | SensorShortName | char(20) | Yes | Yes |

Table 3-51. DmDdSensorXref

Description: This is a cross reference between sensor and collection.

Column List:

| Name | Code | Type | P | M |
|-----------------|-----------------|----------|-----|-----|
| collectionId | collectionId | int | Yes | Yes |
| SensorShortName | SensorShortName | char(20) | Yes | Yes |
| siteId | siteId | int | Yes | Yes |

Table 3-52. DmDdSingleTypeCollection

Description: This class provides a description specific to a single, as opposed to a multitype collection; including citation of external publication, collection state, maintenance and update frequency, and access constraints. The management and development of singletype collections is the subject of other documentation. A single type collection contains a set of granules for which the dominant variation in the value of metadata attributes is in the space and time attributes.

Column List:

| Name | Code | Type | P | M |
|--------------------------------|--------------------------------|--------------|-----|-----|
| AccessConstraints | AccessConstraints | varchar(255) | No | No |
| CitationForExternalPublication | CitationForExternalPublication | varchar(255) | No | No |
| collectionId | collectionId | int | Yes | Yes |
| CollectionState | CollectionState | varchar(255) | No | No |
| MaintenanceandUpdateFrequency | MaintenanceandUpdateFrequency | char(80) | No | No |
| ProcessingLevelID | ProcessingLevelID | char(6) | No | No |
| siteId | siteId | int | Yes | Yes |

Table 3-53. DmDdSite

Description: This table holds information about the site (e.g., site name, site id).

Column List:

| Name | Code | Type | P | M |
|-----------------|-----------------|---------|-----|-----|
| attributeIdMax | attributeIdMax | int | No | No |
| collectionIdMax | collectionIdMax | int | No | No |
| keywordIdMax | keywordIdMax | int | No | No |
| localFlag | localFlag | bit | No | Yes |
| siteId | siteId | int | Yes | Yes |
| siteName | siteName | char(4) | No | No |

Table 3-54. DmDdSpatialDomain

Description: This table holds spatial information about a collection.

Column List:

| Name | Code | Type | P | M |
|--------------|--------------|----------|-----|-----|
| attributeId | attributeId | int | Yes | Yes |
| collectionId | collectionId | int | No | Yes |
| shape | shape | char(25) | No | No |
| siteId | siteId | int | Yes | Yes |

Table 3-55. DmDdSpatialKeywordClass

Description: This class contains the spatial keywords associated with the ECS collection.

Column List:

| Name | Code | Type | P | M |
|----------------|----------------|----------|-----|-----|
| CollectionId | collectionId | int | Yes | Yes |
| SiteId | siteId | int | Yes | Yes |
| SpatialKeyword | SpatialKeyword | char(10) | Yes | Yes |

Table 3-56. DmDdStringDomain

Description: This table stores the values of ECS attributes for the collection.

Column List:

| Name | Code | Type | P | M |
|--------------|--------------|-------------|-----|-----|
| attributeId | attributeId | int | Yes | Yes |
| collectionId | collectionId | int | No | Yes |
| keywordName | keywordName | varchar(80) | Yes | Yes |
| siteId | siteId | int | Yes | Yes |

Table 3-57. DmDdStringInstrumentChar

Description: This table holds information for the instrument characteristics that have string as a data type.

Column List:

| Name | Code | Type | P | M |
|------------------------------|------------------------------|--------------|-----|-----|
| InstrumentCharacteristicName | InstrumentCharacteristicName | char(40) | Yes | Yes |
| StrInstrumentCharValue | StrInstrumentCharValue | varchar(255) | No | No |

Table 3-58. DmDdStringPlatformChar

Description: This table holds information for the platform characteristics that have string as a data type.

Column List:

| Name | Code | Type | P | M |
|--------------------------------|--------------------------------|--------------|-----|-----|
| PlatformCharacteristicName | PlatformCharacteristicName | char(40) | Yes | Yes |
| StrPlatformCharacteristicValue | StrPlatformCharacteristicValue | varchar(255) | No | No |

Table 3-59. DmDdStringSensorChar

Description: This table holds information for the sensor characteristics that have string as a data type.

Column List:

| Name | Code | Type | P | M |
|--------------------------|--------------------------|--------------|-----|-----|
| SensorCharacteristicName | SensorCharacteristicName | char(40) | Yes | Yes |
| StringSensorCharValue | StringSensorCharValue | varchar(255) | No | No |

Table 3-60. DmDdStringType

Description: This table stores the values of ECS attributes for the collection.

Column List:

| Name | Code | Type | P | M |
|-------------------|-------------------|------------|-----|-----|
| attributeId | attributeId | int | Yes | Yes |
| collectionId | collectionId | int | No | Yes |
| listAvailableFlag | listAvailableFlag | numeric(1) | No | No |
| siteId | siteId | int | Yes | Yes |

Table 3-61. DmDdTemporal

Description: This class contains attributes which describe the basis of the time system used in other classes

Column List:

| Name | Code | Type | P | M |
|--------------------|--------------------|----------|-----|-----|
| collectionId | collectionId | int | Yes | Yes |
| DateType | DateType | char(10) | No | No |
| EndsatPresentFlag | EndsatPresentFlag | char(1) | No | No |
| PrecisionofSeconds | PrecisionofSeconds | int | No | No |
| siteId | siteId | int | Yes | Yes |
| TemporalRangeType | TemporalRangeType | char(30) | No | No |
| TimeType | TimeType | char(10) | No | No |

Table 3-62. DmDdTemporalKeywordClass

Description: This class identifies the type of temporal characterization for a granule or collection.

Column List:

| Name | Code | Type | P | M |
|-----------------|-----------------|----------|-----|-----|
| collectionId | collectionId | int | Yes | Yes |
| siteId | siteId | int | Yes | Yes |
| TemporalKeyword | TemporalKeyword | char(10) | Yes | Yes |

Table 3-63. DmDdValidsMapping

Description: This class is used to define the attribute name, keyword and its corresponding mapping attributes, and keywords. This table gives the mapping from ECS to external (V0 or ASTER) and External (V0 or Aster) to ECS.

Column List:

| Name | Code | Type | P | M |
|----------------------|----------------------|--------------|----|-----|
| Direction | Direction | varchar(10) | No | Yes |
| MappedAttributeName | MappedAttributeName | varchar(255) | No | No |
| MappedKeywordName | MappedKeywordName | varchar(80) | No | No |
| PrimaryAttributeName | PrimaryAttributeName | varchar(255) | No | Yes |
| PrimaryKeywordName | PrimaryKeywordName | varchar(80) | No | Yes |

Table 3-64. EcDbVersions

Description: This identifies the current version level of the DM database

Column List

| Name | Type | P | M |
|------------------------|--------------|-----|-----|
| EcDbSchemaVersionID | Smallint | Yes | Yes |
| EcDbDropVersion | Char(64) | No | Yes |
| EcDbDropDescription | Varchar(255) | No | Yes |
| EcDbCurrentVersionFlag | Char(1) | No | Yes |
| EcDbDatabaseName | Varchar(255) | No | No |
| EcDbDropInstallDate | Datetime | No | No |
| EcDbSybaseVersion | Varchar(255) | No | No |
| EcDbSybaseServer | Varchar(255) | No | No |
| EcDbComments | Varchar(255) | No | No |
| EcDbUpdateProcess | Varchar(255) | No | No |

3.1.3 Column Specifications

Brief definitions of each of the columns¹ within the DM Subsystem database and their valid values, or references to other documents containing the valid values, are contained herein. Valid Values identify the permissible data content of the column where there is a finite set of acceptable values that can be defined. Other columns are formatted text, free text, or numeric.

Column: AccessConstraints

Description: Restrictions and legal prerequisites for accessing the collection. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the collection. This is an SDSRV Subsystem column.

Note: These restrictions differ from use restrictions in that they only apply to access.

Valid Values: See 420-TP-015

Column: accuracy

Description: Describes the accuracy of a location as a numerical value. See also accuracyExplanation.

Column: accuracyExplanation

Description: Describes what the numeric value of ACCURACY represents.

Column: acronymDescription

Description: This is the acronym description.

¹ The term "column" is used interchangeably with the term "attribute" where it refers to a database structure. The ECS Conceptual Model was developed using Object Oriented (OO) terminology. This model is converted to a relational structure for physical implementation within Sybase. The descriptions of some "columns" are derived from the OO Conceptual Model.

Column: acronymName □

Description: This is the acronym.

Column: AdditionalAttributeDataType □

Description: This is the data type of the ParameterValue. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: AdditionalAttributeDescription □

Description: This attribute contains a description of the data content identified by AdditionalAttributeName. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: AdditionalAttributeName □

Description: This is the data type of AdditionalAttributeName. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: AggregationRelationship □

Description: This attribute identifies the relationship between the aggregation attribute and its corresponding value. This relationship may be expressed as Boolean operations (e.g., ‘=’, ‘<.’, ‘>’, ‘ne’). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: AggregationType □

Description: This attribute will contain the criteria by which multiple type collections have been grouped. It will describe the major categorization which applies to the data therein. Possible collection groupings include: INSTRUMENT, for all collections associated with a given collecting instrument such as CERES—this is a common aggregation criteria for ECS ‘datasets’; PROJECT, for all data associated with a given project that may or may not be related to a single instrument, such as FIRE—this is again a common aggregation criteria for ECS ‘datasets’; PARAMETER, for all granules that reflect measurements of a single specific (or related group of specific) geophysical parameters, such as: CLOUD PROPERTIES—this is often an aggregation criteria for ECS ‘products’; SUPERGRANULE, for collections of granules that the data provider wishes to be orderable as a single related grouping, such as SSM/I TIME SERIES—this is a concept adopted from MSFC use; EVENT for a predetermined/tagged set of granules that have been found to be related to a particular geophysical phenomena or event, such as MIDWEST FLOOD ’93 or OZONE HOLE or MT. PINATUBO—this is a new ECS concept, also suggested by the University of Virginia Atmospheric researchers. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: AggregationValue □

Description: This attribute contains the value associated with the aggregation type. An example may be EVENT (aggregation type) = MIDWEST FLOOD ’93 (aggregation value). MIDWEST FLOOD ’93 would be the value associated with the event or aggregation type. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ArchiveCenter □

Description: This is the center where the collection is archived. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: attributeDataType**Description:**

This is the data type of the ECS attribute.

Column: attributeDescription

Description: This holds the ECS attribute description.

Column: attributeId

Description: This is the attribute identifier. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: attributeIdMax

Description: Used to generate the next attributeId (attributeIdMax+1), last generated attributeId is stored here.

Column: attributeIdRef

Description: This is the attribute identifier reference

Column: attributeLevelId

Description: This reflects the classification of the attribute level, which defines in general terms the characteristics of the attribute.

Column: attributeSize

Description: This is the ECS attribute size.

Column: CitationForExternalPublication□

Description: The recommended reference to be used when referring to this collection in publications. Its format is free text, but should include: Originator (the name of an organization or individual that developed the data set, where Editor(s)' names are followed by (ed.) and Compiler(s)' names are followed by (comp.)); Publication date (the date of publication or release of the data set); Title (the name by which document can be referenced). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: collectionId□

Description: This is the unique collection identifier. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: collectionIdAgg□

Description: This is the unique collection identifier for multiple collections.

Column: collectionIdMax□

Description: To generate the next collectionId(collectionIdMax +1), last generated collectionId is stored here.

Column: collectionIdRef□

Description: This is the Collection identifier reference.

Column: CollectionState□

Description: This attribute describes the state of the collection, whether it is planned but not yet existent, partially complete due to continual additions from remotely sensed data/processing/reprocessing, or is considered a complete product/dataset. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: CollectionURL

Description: This is the collection URL.

Column: DateInstrumentCharValue

Description: This holds the date on which the instrument characteristic value was issued.

Column: DatePlatformCharValue

Description: This holds the date on which the platform characteristic value was issued.

Column: DateSensorCharValue

Description: This is the date on which the sensor characteristic value was issued.

Column: DateType

Description: This attribute specifies the type of date represented by the value in the date attributes of the temporal subclasses. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: Description

Description: This is the description of a collection.

Column: Direction

Description: This describes the direction of mapping, whether ECS to external(V0 or Aster) or external(V0 or Aster) to ECS.

Valid Values: “ECSToEquiv” The mapping is from ECS to external. “EquivToECS” The mapping is from external to ECS

Examples:

| PrimaryAttribute Name | PrimaryKeyword Name | MappedAttribute Name | MappedKeyword Name | Direction |
|----------------------------------|--------------------------------|---------------------------------|-------------------------------|------------------|
| SOURCE_NAME | Air Droppable Buoy | PlatformShortName | Buoy | EquivToECS |
| SENSOR_NAME | ERB-Scanner | InstrumentShortName | CERES | EquivToECS |
| InstrumentShortName | ASTER | SOURCE_NAME | Radiometer | ECSToEquiv |
| PlatformType | Station | SOURCE_NAME | Ground Station | ECSToEquiv |

Column: disciplineDescription

Description: This is a description for a discipline.

Column: EastBoundingCoordinate

Description: Eastern-most limit of coverage expressed in longitude.

Valid Values: [-180.0 <= East Bounding Coordinate <= 180.0]

Column: EcDbComment

Description: Notes or comments on the database version level.

Column: EcDbCurrentVersionFlag

Description: Flag indicating if this row represents the current database version entry

Valid Values: 1= yes, 0 = no

Column: EcDbDatabaseName

Description: The name of the database for which this database version level is applied.

Column: EcDbDropDescription

Description: The official description of the ECS software drop appropriate for this database version level.

Column: EcDbDropInstallDate

Description: The date and time that the database version level was installed.

Column: EcDbDropVersion

Description: The official name of the ECS software drop appropriate for this database version level.

Column: EcDbSchemaVersionId

Description: The subsystem-specific identifier for this database schema version.

Column: EcDbSybaseServer

Description: The name of the baseline Sybase SQL server controlling this database.

Valid Values: See 920-TDx-009

Column: EcDbSybaseVersion

Description: The software release version of the Sybase SQL server in place when this database version level was initially installed.

Column: EcDbUpdateProcess

Description: The installation method by which this database version level was installed

Column: ECSAttributeName

Description: This holds the ECS attribute name.

Valid Values: See 420-TP-015

Column: ECSDisciplineKeyword

Description: This is the keyword used to describe the general discipline area of the collection. A collection can conceivably cover several disciplines. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ECSParmeterKeyword

Description: Keyword used to describe specific characteristics of a collection at a higher level of detail than provided in ECSVariableKeyword This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ECSTermKeyword

Description: Keyword used to describe the science parameter area of the collection. A collection can conceivably cover many such parameters. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ECSTopicKeyword

Description: Keyword used to describe the general topic area of the collection. A collection can conceivably cover several topics. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ECSVariableKeyword

Description: Keyword used to describe the specific science parameter content of the collection. A collection can conceivably cover many specific parameters. The keyword valid values are the lowest level physical parameter terms which are normally searched by a user; i.e. a user enters a keyword which when found may connect with one or more parameters from collections. The keywords are also the lowest level words which describe product content without being the server specific measurement (held in Parameter class). While there is a controlled list of these parameters held by GCMD, additions can be made by an as yet unspecified configuration control process. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: EndDateTime

Description: The ending date of a collection.

Column: EndsatPresentFlag

Description: This attribute will denote that a data collection which covers, temporally, a discontinuous range, currently ends at the present date. This way, the granules which comprise the data collection that are continuously being added to inventory need not update the data collection metadata for each one. Note that MODIS granules may be added several thousand times a day, making the update of the data collection metadata impractical. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: equivalentAttributeDataType

Description: This holds the data type of the equivalent attribute

Column: equivalentAttributeDescription

Description: This holds the Descriptionm of the equivalent attribute

Column: equivalentAttributeName □

Description: Name of the equivalent attribute

Column: FloatInstrumentCharValue □

Description: This holds the float value of the instrument.

Column: FloatPlatformCharValue □

Description: This holds the float value of the platform.

Column: FloatSensorCharValue □

Description: This is the float value of a sensor.

Column: gcmdEntryId □

Description: The id assigned by the Global Change Master Directory for the data collection. It is equivalent to the V0 attribute MO_ENTRY_ID.

Column: GlossaryDescription □

Description: This is the glossary description.

Column: GlossaryName □

Description: This is the glossary name.

Column: groupDescription □

Description: This is the group description.

Column: groupName □

Description: This is the group name (e.g., Spatial, SpatialDomainContainer).

Column: groupParentName □

Description: This is the name of the group parent. (e.g., for Spatial--ROOT, for SpatialDomainContainer--Spatial)

Column: infoMgrDesc □

Description: The description of the information manager.

Column: infoMgrName □

Description: The name of the information manager.

Column: infoMgrParentName □

Description: Refers to the information manager's parent name.

Column: infoMgrType □

Description: States the type of information manager.

Column: infoMgrUR□

Description: The information manager's Universal Reference.

Column: InstrumentCharacteristicDesc□

Description: The description of the instrument attribute.

Column: InstrumentCharacteristicName□

Description: The name of the instrument characteristic attribute. Instrument characteristics are instrument-specific attributes. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: InstrumentCharacteristicUnit□

Description: The units of the attribute defined with InstrumentCharacteristic. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: InstrumentCharDataType□

Description: The data type of the instrument characteristic/attribute defined by InstrumentCharacteristicName. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: instrumentDescription□

Description: This is the instrument description.

Column: InstrumentLongName □

Description: The expanded name of the primary sensory instrument. (e.g. Advanced Spaceborne Thermal Emission and Reflective Radiometer, Clouds and the Earth's Radiant Energy System, Human Observation). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: InstrumentShortName □

Description: The unique identifier of an instrument. (e.g. ASTER, AVHRR-3, CERES, Human). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: InstrumentTechnique □

Description: The instrument method or procedure (e.g. radiometer, manual enumeration). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: IntInstrumentCharValue □

Description: This holds the integer value of the instrument.

Column: IntPlatformCharacteristicValue □

Description: This holds the integer value of the platform.

Column: IntSensorCharValue □

Description: This holds the integer value of the sensor.

Column: keywordId

Description: This is the keyword identifier.

Column: keywordIdMax

Description: This holds the last generated keywordId (which is the maximum keywordId) in order to generate the next keywordId.

Column: keywordName

Description: This is the keyword name for the DDICT.

Column: keywordNameRef

Description: This is the keyword name reference.

Column: levelDescription

Description: This is the Level description.

Column: levelId

Description: This is the level Identifier.

Column: levelName

Description: MetadataLevel Name

Valid Values:

Collection
Granule

Column: listAvailableFlag

Description: This is a flag used to specify if the list is available for string domain attributes.

Column: localFlag

Description: Used to specify the location of the database.

Column: LongName

Description: This data identifies the long name associated with the collection. This includes dataset name/product name. This is the reference name used in describing the scientific contents of the data collection; it is not the “id” of the data. The existing SPSO product names provide a start point. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: MaintenanceandUpdateFrequency

Description: The frequency with which changes and additions are made to the collection after the initial dataset begins to be collected/processed. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015 (MaintenanceUpdateFrequency)

Column: MappedAttributeName

Description: Describes the corresponding Mapped AttributeName for the PrimaryAttributeName

Column: MappedKeywordName

Description: Describes the corresponding value of the Mapped AttributeName

Column: measurementResolution

Description: This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: NorthBoundingCoordinate

Description: Northern-most coordinate of the limit of coverage expressed in geodetic latitude.

Valid Values: [-90.0 <= North Bounding Coordinate <= 90.0], [North Bounding Coordinate => South Bounding Coordinate]

Column: numericDomainRule

Description: A business rule pertaining to a numeric domain.

Valid Values:

Column: numericPrecision

Description: The precision associated with a numeric domain.

Column: NumOfSensors

Description: The number of discrete (if any) sensors on an instrument. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: OperationMode

Description: Mode of operation of the instrument. Each instrument will have 1 to n modes which may be static for the collection, or changing on a granule-by-granule basis (e.g., domains: launch, survival, initialization, safe, diagnostic, roll, tilt, standby, routine, test, calibration). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ParameterMeasurementResolution

Description: This attribute will be used to identify the smallest unit increment to which the parameter value is measured.

Column: ParameterRange

Description: This attribute provides maximum and minimum value of parameter over whole collection. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ParameterUnitsOfMeasurement

Description: The standard units of measurement for a non-core attribute. AVHRR: Units of Geophysical Parameter = Units of Geophysical Parameter. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ParameterValueAccuracy

Description: An estimate of the accuracy of the assignment of attribute value (e.g., AVHRR: Measurement Error or Precision = Measurement error or precision of a data product parameter). This can be specified in percent or the units with which the parameter is measured. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ParameterValueAccuracyExplanation

Description: This defines the method used for determining the Parameter Value Accuracy that is given for this non core attribute.

Column: PlatformCharacteristicDataType

Description: The data type of the Platform Characteristic/attribute defined by the PlatformCharacteristicName. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: PlatformCharacteristicDesc

Description: Description of the Platform Characteristic attribute. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: PlatformCharacteristicName

Description: The name of the Platform Characteristic attribute. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: PlatformCharacteristicUnit

Description: Units associated with the Platform Characteristic attribute value. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: platformDescription

Description: This is the platform description.

Column: PlatformLongName

Description: The expanded or long name of the platform associated with an instrument. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: PlatformShortName

Description: The unique platform name. (e.g. GOES-8). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: PlatformType

Description: The most relevant platform type. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: PrecisionofSeconds

Description: The precision (number of places to right of decimal point) of seconds used in measurement. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015 (PrecisionOfSeconds)

Column: PrimaryAttributeName

Description: This column describes the Attribute Name (can be ECS or other Attribute)

Column: PrimaryAttributeName

Description: Describes the value of the PrimaryAttributeName

Column: ProcessingCenter

Description: This is the name of the processing center (e.g., GSFC, JPL, SCF). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: ProcessingLevelID

Description: This attribute reflects the classification of the science data processing level, which defines in general terms the characteristics of the output of the processing performed. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: RangeBeginningDate

Description: The year (and optionally month, or month and day) when the temporal coverage period being described began. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: RangeBeginningTime

Description: The first hour (and optionally minute, or minute and second) of the temporal coverage period being described.

Column: RangeEndingDate

Description: The last year (and optionally month, or month and day) of the temporal coverage period being described. GSFC AVHRR This date represents the end date of the latest granule contained in the product. MM/DD/YY format is product-specific for: sage_atmos_dyn, sage_atmos_comp, erbe_erpMMDDYYYY format is product-specific for: LARC_FIRE, LARC_GTE. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: RangeEndingTime

Description: The last hour (and optionally minute, or minute and second) of the temporal coverage period being described for granule or collection. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: RevisionDate

Description: Represents the date and possibly the time that this directory entry was created or the latest date and time of its modification or update. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: searchable

Description: This holds the searchable key for the ECS attribute.

Column: SensorCharacteristicDataType

Description: The data type of the Instrument Characteristic/attribute defined by InstrumentCharacteristicName. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: SensorCharacteristicDesc □

Description: A description of the attribute defined by SensorCharacteristicName. (e.g. SensorCharacteristicName = SensorDevice, SensorCharacteristicDescription = Charge coupled device). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: SensorCharacteristicName □

Description: The name of the Sensor Characteristic/attribute. Sensor attributes defined using SensorCharacteristicName must be a single-valued attribute of the object 'Sensor' and not the attribute of an undefined object. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: SensorCharacteristicUnit □

Description: The unit of the Sensor Characteristic (e.g. nanometers). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: sensorDescription □

Description: Description of a sensor.

Column: SensorLongName □

Description: The generic or long name description of a sensor. (e.g. Visible-Near Infrared, Human Visual, Human Auditory). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: SensorShortName 

Description: A sensor is a defined sensory sub-component of an instrument. (e.g. InstrumentShortName = ASTER, NumberofSensors = 3, SensorShortName = SWIR, SensorShortName = TIR, SensorShortName = VNIR) In cases where the Instrument has a single Sensor or the Instrument and Sensor are synonymous then both attributes should be populated. (e.g. AVHRR). Sensors cannot exist without Instruments. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: SensorTechnique 

Description: The sensor technique (e.g. laser altimetry). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: shape 

Description: Shape of the spatial attribute.

Column: ShortName 

Description: This name will identify the short name associated with the collection or granule. This includes the ECS Technical Baseline product names (e.g., CER02, MOD12) This is the official reference name used in identifying the contents of the data collection. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: siteId 

Description: This is the site identifier. This uniquely identifies the DAAC.

Column: siteIdAgg

Description: This is the site identifier this uniquely identifies the collection aggregation.

Column: siteIdRef

Description: This is the site identifier. This uniquely identifies the DAAC reference.

Column: siteName

Description: This holds the site name.

Column: SouthBoundingCoordinate

Description: Southern-most limit of coverage expressed in geodetic latitude.

Valid Values: [-90.0 <= South Bounding Coordinate <=90.0], South Sounding Coordinate <= North Bounding Coordinate]

Column: SpatialKeyword

Description: This attribute specifies a word or phrase which serves to summarize the spatial regions covered by the collection. It may be repeated if several regions are covered. This often occurs when a collection is described as covering some large region, and several smaller sub-regions within that region. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: StartDateTime

Description: The starting date of a collection.

Column: StringSensorCharValue □

Description: This holds the string value of the sensor.

Column: StrInstrumentCharValue □

Description: This holds the string value of the instrument.

Column: StrPlatformCharacteristicValue □

Description: This holds the string value of the platform.

Column: SuggestedUsage □

Description: This attribute describes how this collection or granule may be best used to support earth science/global change research. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: TemporalKeyword □

Description: This attribute specifies a word or phrase which serves to summarize the temporal characteristics referenced in the collection (e.g., Monthly Composite, Annual Mean). This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: TemporalRangeType □

Description: This attribute tells the system and ultimately the end user how temporal coverage is specified for the collection, granule, or event. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: termDescription 

Description: This contains the description for a term.

Column: TimeType 

Description: This attribute provides the time system which the values found in temporal subclasses represent. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: TopicDescription 

Description: This is the topic description.

Column: units 

Description: This is the measurement standard used for the numeric type of data.

Column: variableDescription 

Description: This is the variable description

Column: VersionDescription 

Description: This is the description of the collection identified by the Version ID.

Column: VersionID 

Description: This is the version identifier for the collection. This is an SDSRV Subsystem column.

Valid Values: See 420-TP-015

Column: WestBoundingCoordinate

Description: Western-most coordinate of the limit of coverage expressed in geodetic longitude.

Valid Values: [-180.0 <= West Bounding Coordinate <= 180.0]

3.1.4 Column Domains

Domains specify the ranges of values allowed for a given column within the database table. Sybase supports the definition of specific domains to further limit the format of data for a given column. Sybase domains are, in effect, user-defined data types. There are no domains currently defined within the DM Subsystem S-Designer repository.

3.1.5 Column Default Values

A default value is used to supply a value for a column when one is not defined at row insert time. Values default to null values if not specifically stated in Section 3.1.3; reference 311-CD-107-002 for those columns marked as replicated columns from the SDSRV Subsystem.

3.1.6 Rules

Sybase supports the definition of rules. Rules provide a means for enforcing domain constraints on a given column or combination of columns. Currently, there are no rules defined in the DM databases.

3.1.7 Views

Sybase allows the definition of views as a means of limiting an application or users' access to data in the database. Views create a logical database table from columns found in one or more database tables. Views defined within the DM Subsystem database are listed below.

Table 3-65. View List

| Name | Code | Upd | Gen |
|--------------------------|--------------------------|-----|-----|
| DmDdStringAttributesUv | DmDdStringAttributesUv | Yes | Yes |
| DmDdTemporalAttributesUv | DmDdTemporalAttributesUv | Yes | Yes |

3.1.7.1 View: DmDdStringAttributesUv

Code □

```
create view DmDdStringAttributesUv
as
select
    A.collectionId collectionId,
    A.siteId siteId,
    A.equivalentAttributeName AdditionalAttributeName,
    A.attributeLevelId attributeLevelId,
    B.keywordName keywordName
from
    DmDdEquivalentAttributes A, DmDdStringDomain B
where
    A.siteId = B.siteId
and
    A.attributeId = B.attributeId
and
    A.equivalentAttributeDataType = "S"
```

3.1.7.2 View: DmDdTTemporalAttributesUv

Code □

```
create view DmDdTTemporalAttributesUv
as
select
    A.collectionId collectionId,
    A.siteId siteId,
    A.equivalentAttributeName AdditionalAttributeName,
    A.attributeLevelId attributeLevelId,
    B.StartDateTime StartDateTime,
    B.EndDateTime EndDateTime
from
    DmDdEquivalentAttributes A, DmDdTDomain B
where
    A.siteId = B.siteId
and
    A.attributeId = B.attributeId
and
    A.equivalentAttributeDataType = "D"
```

3.1.8 Declarative Integrity Constraints

Sybase allows the enforcement of referential integrity via the use of declarative integrity constraints. Integrity constraints allow the SQL server to enforce primary and foreign key integrity checks automatically without requiring programming. Sybase constraints support “restrict-only” operations. This means that a row can not be deleted or the key values modified if there are rows in other database tables having a foreign key dependency on that row. Cascade delete and update operations cannot be performed if a declarative integrity constraint has been used. The following information describes the declarative integrity constraints contained in the DM Subsystem database.

Table 3-66. Dependencies on Table: DmDdCollECSAttributeXref

Reference by List

| Referenced by | Primary Key | Foreign Key |
|-------------------|-----------------------|-----------------------|
| DmDdAttributeXref | siteId attributeId | SiteId attributeId |

Table 3-67. Dependencies on Table: DmDdECSCollection (1 of 2)

Reference by List

| Referenced by | Primary Key | Foreign Key |
|--------------------------|------------------------|------------------------|
| DmDdBoundingRectangle | collectionId siteId | CollectionId siteId |
| DmDdEquivalentAttributes | collectionId siteId | CollectionId siteId |
| DmDdMultipleCollection | collectionId siteId | CollectionId siteId |
| DmDdSingleTypeCollection | collectionId siteId | CollectionId siteId |
| DmDdSpatialKeywordClass | collectionId siteId | CollectionId siteId |
| DmDdTemporal | collectionId siteId | CollectionId siteId |
| DmDdTemporalKeywordClass | collectionId siteId | CollectionId siteId |
| DmDdAdditionalAttributes | collectionId siteId | CollectionId siteId |
| DmDdCollECSAttributeXref | collectionId siteId | CollectionId siteId |

Table 3-67. Dependencies on Table: DmDdECSCollection (2 of 2)

Reference by List

| Referenced by | Primary Key | Foreign Key |
|------------------------|------------------------|------------------------|
| DmDdInfoMgrCollXref | collectionId siteId | CollectionId siteId |
| DmDdInstrumentXref | collectionId siteId | CollectionId siteId |
| DmDdPlatformXref | collectionId siteId | CollectionId siteId |
| DmDdSensorXref | collectionId siteId | CollectionId siteId |
| DmDdECSCollKeywordXref | collectionId siteId | CollectionId siteId |

Table 3-68. Dependencies on Table: DmDdECSCollKeywordXref

Reference by List

| Referenced by | Primary Key | Foreign Key |
|--------------------------|---------------------|---------------------|
| DmDdKeywordParameterXref | keywordId siteId | KeywordId siteId |

Table 3-69. Dependencies on Table: DmDdECSDiscipline

Reference by List

| Referenced by | Primary Key | Foreign Key |
|------------------------|----------------------|----------------------|
| DmDdECSCollKeywordXref | ECSDisciplineKeyword | ECSDisciplineKeyword |

Table 3-70. Dependencies on Table: DmDdECSPparameterDetails

Reference by List

| Referenced by | Primary Key | Foreign Key |
|--------------------------|---------------------|---------------------|
| DmDdKeywordParameterXref | ECSParameterKeyword | ECSParameterKeyword |

Table 3-71. Dependencies on Table: DmDdECSTerm

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|------------------------|----------------|----------------|
| DmDdECSCollKeywordXref | ECSTermKeyword | ECSTermKeyword |

Table 3-72. Dependencies on Table: DmDdECSTopic

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|------------------------|-----------------|-----------------|
| DmDdECSCollKeywordXref | ECSTopicKeyword | ECSTopicKeyword |

Table 3-73. Dependencies on Table: DmDdECSVariable

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|------------------------|--------------------|--------------------|
| DmDdECSCollKeywordXref | ECSVariableKeyword | ECSVariableKeyword |

Table 3-74. Dependencies on Table: DmDdEquivalentAttributes

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|-------------------|-----------------------|-----------------------------|
| DmDdAttributeXref | siteId attributeId | SiteIdRef attributeIdRef |

Table 3-75. Dependencies on Table: DmDdGroup

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|--------------------|--------------|-----------------|
| DmDdGroupXref | groupName | GroupName |
| DmDdGroupXref | groupName | GroupParentName |
| DmDdLevelGroupXref | groupName | GroupName |

Table 3-76. Dependencies on Table: DmDdInfoMgr

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|---------------------|--------------|-------------------|
| DmDdInfoMgrCollXref | infoMgrName | InfoMgrName |
| DmDdInfoMgrXref | infoMgrName | InfoMgrName |
| DmDdInfoMgrXref | infoMgrName | InfoMgrParentName |

Table 3-77. Dependencies on Table: DmDdInstrument

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|------------------------------|---------------------|---------------------|
| DmDdInstrumentCharacteristic | InstrumentShortName | InstrumentShortName |
| DmDdInstrumentXref | InstrumentShortName | InstrumentShortName |
| DmDdOperationModeClass | InstrumentShortName | InstrumentShortName |
| DmDdSensorInstrumentXref | InstrumentShortName | InstrumentShortName |
| DmDdInstrumentPlatformXref | InstrumentShortName | InstrumentShortName |

Table 3-78. Dependencies on Table: DmDdInstrumentCharacteristic

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|--------------------------|------------------------------|------------------------------|
| DmDdDateInstrumentChar | InstrumentCharacteristicName | InstrumentCharacteristicName |
| DmDdFloatInstrumentChar | InstrumentCharacteristicName | InstrumentCharacteristicName |
| DmDdIntInstrumentChar | InstrumentCharacteristicName | InstrumentCharacteristicName |
| DmDdStringInstrumentChar | InstrumentCharacteristicName | InstrumentCharacteristicName |

Table 3-79. Dependencies on Table: DmDdMetadataLevel

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|--------------------------|--------------|------------------|
| DmDdAdditionalAttributes | levelId | AttributeLevelId |
| DmDdLevelGroupXref | levelId | LevelId |
| DmDdEquivalentAttributes | levelId | attributeLevelId |
| DmDdColleCSAttributeXref | levelId | attributeLevelId |

Table 3-80. Dependencies on Table: DmDdMultipleCollection

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|--------------------|------------------------|------------------------------|
| DmDdCollectionXref | collectionId siteId | collectionIdRef siteIdRef |
| DmDdCollectionXref | collectionId siteId | collectionIdAgg siteIdAgg |

Table 3-81. Dependencies on Table: DmDdPlatform

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|----------------------------|-------------------|-------------------|
| DmDdInstrumentPlatformXref | PlatformShortName | PlatformShortName |
| DmDdPlatformCharacteristic | PlatformShortName | PlatformShortName |
| DmDdPlatformXref | PlatformShortName | PlatformShortName |

Table 3-82. Dependencies on Table: DmDdPlatformCharacteristic

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|------------------------|----------------------------|----------------------------|
| DmDdDatePlatformChar | PlatformCharacteristicName | PlatformCharacteristicName |
| DmDdFloatPlatformChar | PlatformCharacteristicName | PlatformCharacteristicName |
| DmDdIntPlatformChar | PlatformCharacteristicName | PlatformCharacteristicName |
| DmDdStringPlatformChar | PlatformCharacteristicName | PlatformCharacteristicName |

Table 3-83. Dependencies on Table: DmDdSensor

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|--------------------------|-----------------|-----------------|
| DmDdSensorCharacteristic | SensorShortName | SensorShortName |
| DmDdSensorXref | SensorShortName | SensorShortName |
| DmDdSensorInstrumentXref | SensorShortName | SensorShortName |

Table 3-84. Dependencies on Table: DmDdSensorCharacteristic

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|----------------------|--------------------------|--------------------------|
| DmDdDateSensorChar | SensorCharacteristicName | SensorCharacteristicName |
| DmDdFloatSensorChar | SensorCharacteristicName | SensorCharacteristicName |
| DmDdIntSensorChar | SensorCharacteristicName | SensorCharacteristicName |
| DmDdStringSensorChar | SensorCharacteristicName | SensorCharacteristicName |

Table 3-85. Dependencies on Table: DmDdSingleTypeCollection

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|--------------------|------------------------|------------------------------|
| DmDdCollectionXref | collectionId siteId | collectionIdRef siteIdRef |

Table 3-86. Dependencies on Table: DmDdStringDomain

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|----------------------|--------------------------------------|---|
| DmDdKeywordAliasXref | siteId attributeId keywordName | siteId attributeId keywordName |
| DmDdKeywordAliasXref | siteId attributeId keywordName | siteIdRef attributeIdRef keywordNameRef |

Table 3-87. Dependencies on Table: DmDdStringType

Reference by List□

| Referenced by□ | Primary Key□ | Foreign Key□ |
|------------------|-----------------------|-----------------------|
| DmDdStringDomain | siteId attributeId | siteId attributeId |

Table 3-88. Dependencies on Table: DmDdTemporal

Reference by List

| Referenced by | Primary Key | Foreign Key |
|-------------------|------------------------|------------------------|
| DmDdRangeDateTime | collectionId siteId | collectionId siteId |

3.1.9 Triggers

The Sybase Database Management System (DBMS) supports the enforcement of business rules for data integrity via the use of trigger code. A trigger is defined as a set of activities or checks that are performed automatically by the DBMS whenever an update command occurs for a given database table. The term *update* is defined to identify those database commands that result in inserting (adding) a row, changing a column within an existing row, and deleting a row.

Triggers are implemented at the database table level. Table 3-89 below provides an alphabetically ordered set of triggers used to assure data integrity for the DM Subsystem database. This table includes the trigger name, the database table it is related to, and a brief description of the trigger.

Table 3-89. Trigger Descriptions (1 of 2)

| Database Table | TriggerName | Trigger Type | Description |
|--------------------------|---------------------------|--------------|---|
| DmDdAdditionalAttributes | TrigDelAddiAttribute | Delete | Error return if dependencies exist. |
| DmDdAttributeXref | TrigUpdDmDdAttributeXref | Delete | Error return if dependencies exist |
| DmDdCollECSAttributeXref | TrigDelCollECSAXref | Delete | Error return if dependencies exist |
| DmDdDateTimeDomain | TrigInsDmDdDateTimeDomain | Insert | Error return if no reference data exists for new record in DmDdDateTimeDomain |
| DmDdDateTimeDomain | TrigUpdDateTimeDomain | Update | Error return if no reference data exists for updated data in DmDdDateTimeDomain |
| DmDdECSCollection | TrigInsUpdDmDdECSColl | Insert | Parent "DmDdMetadataLevel" must exist when inserting a child |

Table 3-89. Trigger Descriptions (2 of 2)

| Database Table | TriggerName | Trigger Type | Description |
|--------------------------|--------------------------|--------------|--|
| DmDdECSCollection | TrigInsUpdDmDdECSColl | Update | Trigger that checks for duplicate ShortName |
| DmDdEquivalentAttributes | TrigDelEquicAttribute | Delete | Error is returned when dependency exists |
| DmDdNumericDomain | TrigInsDmDdNumDomain | Insert | Error is returned when no reference data exists for new record on insert |
| DmDdNumericDomain | TrigUpdDmDdNumericDomain | Update | Error is returned when no reference data exists for updated data |
| DmDdSpatialDomain | TrigInsDmDdSpatialDomain | Insert | Error is returned when no reference data exists for new record |
| DmDdSpatialDomain | TrigUpdDmDdSpatialDomain | Update | Error is returned when no reference data exists for new record |
| DmDdStringType | TrigInsDmDdStringType | Insert | Error is returned when no reference data exists for new record |
| DmDdStringType | TrigUpdDmDdStringType | Update | Error is returned when no reference data exists for updated data |

3.1.10 Trigger Code Listings

3.1.10.1 Trigger: TrigDelAddiAttribute

Trigger Code

```
--*****
--BEGIN PROLOG
--
--TRIGGER NAME:      TrigDelAddiAttribute
--
--TABLE ACCESSED:    DmDdAdditionalAttributes
--                      DmDdStringType
--                      DmDdDateTimeDomain
```

```

-- DmDdNumericDomain
-- DmDdSpatialDomain
-- DmDdAttributeXref
-- deleted
-- ****
CREATE TRIGGER TrigDelAddiAttribute
ON DmDdAdditionalAttributes
FOR DELETE
AS
BEGIN

IF (SELECT count(*) FROM deleted d, DmDdStringType s
    WHERE d.siteId = s.siteId
      AND d.attributeId = s.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdDateTimeDomain a
    WHERE d.siteId = a.siteId
      AND d.attributeId = a.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdNumericDomain n
    WHERE d.siteId = n.siteId
      AND d.attributeId = n.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdSpatialDomain s
    WHERE d.siteId = s.siteId
      AND d.attributeId = s.attributeId) > 0
BEGIN

    INSERT DmDdAdditionalAttributes
    SELECT * FROM deleted

    RAISERROR 30515
    "The record in DmDdAdditionalAttributes is still referred by other data,
deleting has been aborted"
    RETURN
END
RETURN
go

```

3.1.10.2 Trigger: TrigUpdDmDdAttributeXref

Trigger Code

```
--*****  
--BEGIN PROLOG  
--  
--TRIGGER NAME:      TrigUpdDmDdAttributeXref  
--  
--TABLE ACCESSED:   DmDdCollECSAttributeXref  
--                      DmDdAttributeXref  
--                      inserted  
--                      deleted  
--  
--*****  
  
CREATE TRIGGER TrigUpdDmDdAttributeXref  
ON DmDdAttributeXref  
FOR UPDATE  
AS  
BEGIN  
    DECLARE @attributeIdIns      attIdType,  
            @siteIdIns        int,  
            @attributeIdDel    attIdType,  
            @siteIdDel        int,  
            @attributeIdRefIns attIdType,  
            @siteIdRefIns     int,  
            @attributeIdRefDel attIdType,  
            @siteIdRefDel     int,  
            @error             int  
  
    BEGIN  
        DECLARE updAttributeXrefCS CURSOR FOR  
            SELECT i.siteId, i.attributeId, d.siteId, d.attributeId,  
                   i.siteIdRef, i.attributeIdRef, d.siteIdRef, d.attributeIdRef  
            FROM inserted i, deleted d  
            WHERE i.siteId *= d.siteId  
                  AND i.attributeId *= d.attributeId  
  
        OPEN updAttributeXrefCS  
  
        FETCH updAttributeXrefCS INTO  
            @siteIdIns,  
            @attributeIdIns,
```

```

@siteIdDel,
@attributeIdDel,
@siteIdRefIns,
@attributeIdRefIns,
@siteIdRefDel,
@attributeIdRefDel

WHILE @@sqlstatus != 2
BEGIN
    SELECT @error = 0
    IF @siteIdDel = null AND @attributeIdDel = null
        AND @siteIdRefDel = null AND @attributeIdRefDel = null
    BEGIN

        IF (select count(*) FROM DmDdCollECSAttributeXref
            WHERE siteId = @siteIdIns
            AND attributeId = @attributeIdIns) = 0
        AND (SELECT count(*) FROM DmDdEquivalentAttributes
            WHERE siteId = @siteIdIns
            AND attributeId = @attributeIdIns) = 0
        BEGIN
            SELECT @error = 1
        END

        IF @error = 0
        BEGIN
            IF (select count(*) FROM DmDdCollECSAttributeXref
                WHERE siteId = @siteIdRefIns
                AND attributeId = @attributeIdRefIns) = 0
            AND (SELECT count(*) FROM DmDdEquivalentAttributes
                WHERE siteId = @siteIdRefIns
                AND attributeId = @attributeIdRefIns) = 0
            BEGIN
                SELECT @error = 1
            END
        END

        IF @error = 1
        BEGIN
            DELETE DmDdAttributeXref
            FROM DmDdAttributeXref s, inserted i
            WHERE s.siteId = i.siteId
            AND s.attributeId = i.attributeId
        END
    END
END

```

```

        SELECT * from deleted

        RAISERROR 30515
        "No reference data exists for updated data in DmDdAttributeXref, updating
has been aborted"
        RETURN
END

END /* if @siteIdDel = null and @attributeIdDel = null */

FETCH updAttributeXrefCS INTO
    @siteIdIns,
    @attributeIdIns,
    @siteIdDel,
    @attributeIdDel,
    @siteIdRefIns,
    @attributeIdRefIns,
    @siteIdRefDel,
    @attributeIdRefDel

        END /* WHILE */
END
END
RETURN
go

```

3.1.10.3 Trigger: TrigDelCollECSAXref

Trigger Code □

```

--*****
--BEGIN PROLOG
--
--TRIGGER NAME:      TrigDelCollECSAttriXref
--
--TABLE ACCESSED:   DmDdCollECSAttributeXref
--                  DmDdStringType
--                  DmDdDateTimeDomain
--                  DmDdNumericDomain
--                  DmDdSpatialDomain
--                  DmDdAttributeXref
--                  deleted

```

```

-- ****
CREATE TRIGGER TrigDelCollECSAXref
ON DmDdCollECSAttributeXref
FOR DELETE
AS
BEGIN

IF (SELECT count(*) FROM deleted d, DmDdStringType s
    WHERE d.siteId = s.siteId
    AND d.attributeId = s.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdDateTimeDomain a
    WHERE d.siteId = a.siteId
    AND d.attributeId = a.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdNumericDomain n
    WHERE d.siteId = n.siteId
    AND d.attributeId = n.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdSpatialDomain s
    WHERE d.siteId = s.siteId
    AND d.attributeId = s.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdAttributeXref s
    WHERE d.siteId = s.siteId
    AND d.attributeId = s.attributeId
    OR d.siteId = s.siteIdRef
    AND d.attributeId = s.attributeIdRef) > 0
BEGIN

    INSERT DmDdCollECSAttributeXref
    SELECT * FROM deleted

    RAISERROR 30515
    "The record in DmDdCollECSAttributeXref is stil refered by other data,
deleting has been aborted"
    RETURN
END
END
RETURN
go

```

3.1.10.4 Trigger: TrigInsDmDdDateTimeDomain

Trigger Code

```
--*****  
--BEGIN PROLOG  
--  
--TRIGGER NAME:      TrigInsDmDdDateTimeDomain  
--  
--TABLE ACCESSED:   DmDdCollECSAttributeXref  
--                  DmDdAdditionalAttributes  
--                  DmDdDateTimeDomain  
--                  inserted  
--  
--*****  
  
CREATE TRIGGER TrigInsDmDdDateTimeDomain  
ON DmDdDateTimeDomain  
FOR INSERT  
AS  
BEGIN  
    DECLARE @attributeId      attIdType,  
            @siteId          int,  
            @hasIt           int  
  
    BEGIN  
        DECLARE insDateTimeDomainCS CURSOR FOR  
            SELECT siteId, attributeId  
            FROM inserted  
  
        OPEN insDateTimeDomainCS  
  
        FETCH insDateTimeDomainCS INTO  
            @siteId,  
            @attributeId  
  
        WHILE @@sqlstatus != 2  
        BEGIN  
            EXEC ProcCheckAttriExist @siteId = @siteId,  
                @attributeId = @attributeId,  
                @hasIt = @hasIt output  
            IF @hasIt = 0  
            BEGIN  
                DELETE DmDdDateTimeDomain
```

```

        FROM DmDdDateTimeDomain s, inserted i
        WHERE s.siteId = i.siteId
        AND s.attributeId = i.attributeId

        RAISERROR 30515
        "No reference data exists for new record in DmDdDateTimeDomain,
inserting has been aborted"
        RETURN
    END

    FETCH insDateTimeDomainCS INTO
        @siteId,
        @attributeId
    END /* WHILE */

END
END
RETURN
go

```

3.1.10.5 Trigger: TrigUpdDateTimeDomain

Trigger Code

```

--*****
--BEGIN PROLOG
--
--TRIGGER NAME:      TrigUpdDmDdDateTimeDomain
--
--TABLE ACCESSED:   DmDdCollECSAttributeXref
--                  DmDdDateTimeDomain
--                  inserted
--                  deleted
--
--*****

```

```

CREATE TRIGGER TrigUpdDateTimeDomain
ON DmDdDateTimeDomain
FOR UPDATE
AS
BEGIN
    DECLARE @attributeIdIns      attIdType,
            @siteIdIns       int,
            @attributeIdDel attIdType,

```

```

@siteIdDel          int

BEGIN
    DECLARE updDateTimeDomainCS CURSOR FOR
        SELECT i.siteId, i.attributeId, d.siteId, d.attributeId
        FROM inserted i, deleted d
        WHERE i.siteId *= d.siteId
        AND i.attributeId *= d.attributeId

    OPEN updDateTimeDomainCS

    FETCH updDateTimeDomainCS INTO
        @siteIdIns,
        @attributeIdIns,
        @siteIdDel,
        @attributeIdDel

    WHILE @@sqlstatus != 2
    BEGIN
        IF @siteIdDel = null AND @attributeIdDel = null
        BEGIN

            IF (select count(*) FROM DmDdCollECSAttributeXref
                WHERE siteId = @siteIdIns
                AND attributeId = @attributeIdIns) = 0
            AND (SELECT count(*) FROM DmDdAdditionalAttributes
                WHERE siteId = @siteIdIns
                AND attributeId = @attributeIdIns) = 0
            AND (SELECT count(*) FROM DmDdEquivalentAttributes
                WHERE siteId = @siteIdIns
                AND attributeId = @attributeIdIns) = 0
            BEGIN
                DELETE DmDdDateTimeDomain
                FROM DmDdDateTimeDomain s, inserted i
                WHERE s.siteId = i.siteId
                AND s.attributeId = i.attributeId

                INSERT DmDdDateTimeDomain
                SELECT * from deleted

                RAISERROR 30515
                "No reference data exists for updated data in DmDdDateTimeDomain,
                updating has been aborted"
                RETURN
            END
        END
    END

```

```

        END /* if @siteIdDel = null and @attributeIdDel = null */

        FETCH updDateTimeDomainCS INTO
            @siteIdIns,
            @attributeIdIns,
            @siteIdDel,
            @attributeIdDel

    END /* WHILE */

END
END
RETURN
go

```

3.1.10.6 Trigger: TrigInsUpdDmDdECSColl

Trigger Code

```

--|||||||||||||||||||||||||||||||||||||||||
-- Name: TrigUpdDmDdECSCollection
--
-- Description:
--
-- Trigger that check duplicate ShortName
--
--|||||||||||||||||||||||||||||||||||||

```

create trigger TrigInsUpdDmDdECSColl on DmDdECSCollection
for insert, update as
begin

```

if @@rowcount = 0
    return

declare shortName_csr cursor for
    select collectionId, siteId, ShortName, VersionID
    from inserted

open shortName_csr

declare
    @collectionId int,
    @siteId          int,
    @shortName       char(20),

```

```

@versionId          int

fetch shortName_crsr into
    @collectionId,
    @siteId,
    @shortName,
    @versionId

while @@sqlstatus != 2
begin

    if(select count(*)
        from DmDdECSCollection
        where ShortName = @shortName
        and VersionID = @versionId
        and (collectionId != @collectionId or siteId != @siteId)
        ) > 0
    begin

        raiserror 25100 "Duplicate Collection found, update failed"
        rollback transaction
        return
    end -- if(select count(*))

    fetch shortName_crsr into
        @collectionId,
        @siteId,
        @shortName,
        @versionId

end --while
close shortName_crsr
end
return
go

```

3.1.10.7 Trigger: TrigInsUpdDmDdECSColl

Trigger Code

```
--/////////////////////////////////////////////////////////////////////////
-- Name: TrigUpdDmDdECSCollection
--
-- Description:
--
-- Trigger that check duplicate ShortName
--
--/////////////////////////////////////////////////////////////////////////

create trigger TrigInsUpdDmDdECSColl on DmDdECSCollection
for insert, update as
begin

    if @@rowcount = 0
        return

    declare shortName_crsr cursor for
        select collectionId, siteId, ShortName, VersionID
        from inserted

    open shortName_crsr

    declare
        @collectionId int,
        @siteId          int,
        @shortName       char(20),
        @versionId       int

    fetch shortName_crsr into
        @collectionId,
        @siteId,
        @shortName,
        @versionId

    while @@sqlstatus != 2
    begin

        if(select count(*)
            from DmDdECSCollection
            where ShortName = @shortName
```

```

        and VersionID = @versionId
        and (collectionId != @collectionId or siteId != @siteId)
        ) > 0
begin

        raiserror 25100 "Duplicate Collection found, update failed"
        rollback transaction
        return
end -- if(select count(*))

fetch shortName_crsr into
@collectionId,
@siteId,
@shortName,
@versionId

end --while
close shortName_crsr
end
return
go

```

3.1.10.8 Trigger: TrigDelEquicAttribute

Trigger Code

```

--*****
--BEGIN PROLOG
--
--TRIGGER NAME:      TrigDelEquicAttribute
--
--TABLE ACCESSED:    DmDdAdditionalAttributes
--                    DmDdStringType
--                    DmDdDateTimeDomain
--                    DmDdNumericDomain
--                    DmDdSpatialDomain
--                    DmDdAttributeXref
--                    deleted
--
--*****

```

```

CREATE TRIGGER TrigDelEquicAttribute
ON DmDdEquivalentAttributes
FOR DELETE
AS

```

```

BEGIN

IF (SELECT count(*) FROM deleted d, DmDdStringType s
    WHERE d.siteId = s.siteId
    AND d.attributeId = s.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdDateTimeDomain a
    WHERE d.siteId = a.siteId
    AND d.attributeId = a.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdNumericDomain n
    WHERE d.siteId = n.siteId
    AND d.attributeId = n.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdSpatialDomain s
    WHERE d.siteId = s.siteId
    AND d.attributeId = s.attributeId) > 0
OR (SELECT count(*) FROM deleted d, DmDdAttributeXref s
    WHERE d.siteId = s.siteId
    AND d.attributeId = s.attributeId)
    OR d.siteId = s.siteIdRef
    AND d.attributeId = s.attributeIdRef) > 0
BEGIN

    INSERT DmDdEquivalentAttributes
    SELECT * FROM deleted

    RAISERROR 30515
    "The record in DmDdEquivalentAttributes is still referred by other data,
deleting has been aborted"
    RETURN
END
RETURN
go

```

3.1.10.9 Trigger: TrigInsDmDdNumDomain

Trigger Code

```

--*****  

--BEGIN PROLOG  

--  

--TRIGGER NAME:      TrigInsDmDdNumericDomain  

--
```

```

--TABLE ACCESSED:      DmDdCollECSAttributeXref
--                           DmDdAdditionalAttributes
--                           DmDdNumericDomain
--                           inserted
--
--*****
CREATE TRIGGER TrigInsDmDdNumDomain
ON DmDdNumericDomain
FOR INSERT
AS
BEGIN
    DECLARE @attributeId      attIdType,
            @siteId          int,
            @hasIt           int

    BEGIN
        DECLARE insNumericDomainCS CURSOR FOR
            SELECT siteId, attributeId
            FROM inserted

        OPEN insNumericDomainCS

        FETCH insNumericDomainCS INTO
            @siteId,
            @attributeId

        WHILE @@sqlstatus != 2
        BEGIN
            EXEC ProcCheckAttriExist @siteId = @siteId,
                                      @attributeId = @attributeId,
                                      @hasIt = @hasIt output
            IF @hasIt = 0
            BEGIN
                DELETE DmDdNumericDomain
                FROM DmDdNumericDomain s, inserted i
                WHERE s.siteId = i.siteId
                AND s.attributeId = i.attributeId

                RAISERROR 30515
                "No reference data exists for new record in DmDdNumericDomain,
                inserting has been aborted"
                RETURN
            END
        END
    END

```

```

        FETCH insNumericDomainCS INTO
            @siteId,
            @attributeId
        END /* WHILE */
    END
    END
    RETURN
    go

```

3.1.10.10 Trigger: TrigUpdDmDdNumericDomain

Trigger Code

```

--*****
--BEGIN PROLOG
--
--TRIGGER NAME:      TrigUpdDmDdNumericDomain
--
--TABLE ACCESSED:    DmDdCollECSAttributeXref
--                      DmDdNumericDomain
--                      inserted
--                      deleted
--
--*****

```

```

CREATE TRIGGER TrigUpdDmDdNumericDomain
ON DmDdNumericDomain
FOR UPDATE
AS
BEGIN
    DECLARE @attributeIdIns      attIdType,
            @siteIdIns       int,
            @attributeIdDel attIdType,
            @siteIdDel       int

    BEGIN
        DECLARE updNumericDomainCS CURSOR FOR
            SELECT i.siteId, i.attributeId, d.siteId, d.attributeId
            FROM inserted i, deleted d
            WHERE i.siteId *= d.siteId
            AND i.attributeId *= d.attributeId

        OPEN updNumericDomainCS
    END

```

```

FETCH updNumericDomainCS INTO
    @siteIdIns,
    @attributeIdIns,
    @siteIdDel,
    @attributeIdDel

WHILE @@sqlstatus != 2
BEGIN
    IF @siteIdDel = null AND @attributeIdDel = null
    BEGIN

        IF (select count(*) FROM DmDdCollECSAttributeXref
            WHERE siteId = @siteIdIns
            AND attributeId = @attributeIdIns) = 0
        AND (SELECT count(*) FROM DmDdAdditionalAttributes
            WHERE siteId = @siteIdIns
            AND attributeId = @attributeIdIns) = 0
        AND (SELECT count(*) FROM DmDdEquivalentAttributes
            WHERE siteId = @siteIdIns
            AND attributeId = @attributeIdIns) = 0
        BEGIN
            DELETE DmDdNumericDomain
            FROM DmDdNumericDomain s, inserted i
            WHERE s.siteId = i.siteId
            AND s.attributeId = i.attributeId

            INSERT DmDdNumericDomain
            SELECT * from deleted

            RAISERROR 30515
            "No reference data exists for updated data in DmDdNumericDomain,
            updating has been aborted"
            RETURN
        END
    END /* if @siteIdDel = null and @attributeIdDel = null */

    FETCH updNumericDomainCS INTO
        @siteIdIns,
        @attributeIdIns,
        @siteIdDel,
        @attributeIdDel

END /* WHILE */

```

```
END  
END  
RETURN  
go
```

3.1.10.11 Trigger: TrigInsDmDdSpatialDomain

Trigger Code

```
--*****  
--BEGIN PROLOG  
--  
--TRIGGER NAME:      TrigInsDmDdSpatialDomain  
--  
--TABLE ACCESSED:    DmDdCollECSAttributeXref  
--                      DmDdAdditionalAttributes  
--                      DmDdSpatialDomain  
--                      inserted  
--  
--*****
```

```
CREATE TRIGGER TrigInsDmDdSpatialDomain  
ON DmDdSpatialDomain  
FOR INSERT  
AS  
BEGIN  
    DECLARE @attributeId      attIdType,  
            @siteId          int,  
            @hasIt           int  
  
    BEGIN  
        DECLARE insSpatialDomainCS CURSOR FOR  
            SELECT siteId, attributeId  
            FROM inserted  
  
        OPEN insSpatialDomainCS  
  
        FETCH insSpatialDomainCS INTO  
            @siteId,  
            @attributeId  
  
        WHILE @@sqlstatus != 2  
        BEGIN
```

```

EXEC ProcCheckAttriExist @siteId = @siteId,
                           @attributeId = @attributeId,
                           @hasIt = @hasIt output
IF @hasIt = 0
BEGIN
    DELETE DmDdSpatialDomain
    FROM DmDdSpatialDomain s, inserted i
    WHERE s.siteId = i.siteId
    AND s.attributeId = i.attributeId
    RAISERROR 30515
    "No reference data exists for new record in DmDdSpatialDomain,
inserting has been aborted"
    RETURN
END
FETCH insSpatialDomainCS INTO
    @siteId,
    @attributeId
END /* WHILE */
END
END
RETURN
go

```

3.1.10.12 Trigger: TrigUpdDmDdSpatialDomain

Trigger Code

```

--*****
--BEGIN PROLOG
--
--TRIGGER NAME:      TrigUpdDmDdSpatialDomain
--
--TABLE ACCESSED:   DmDdCollECSAttributeXref
--                  DmDdSpatialDomain
--                  inserted
--                  deleted
--
--*****

```

```

CREATE TRIGGER TrigUpdDmDdSpatialDomain
ON DmDdSpatialDomain
FOR UPDATE
AS
BEGIN
    DECLARE @attributeIdIns      attIdType,

```

```

@siteIdIns      int,
@attributeIdDel attIdType,
@siteIdDel      int

BEGIN
DECLARE updSpatialDomainCS CURSOR FOR
    SELECT i.siteId, i.attributeId, d.siteId, d.attributeId
    FROM inserted i, deleted d
    WHERE i.siteId *= d.siteId
    AND i.attributeId *= d.attributeId

OPEN updSpatialDomainCS

FETCH updSpatialDomainCS INTO
    @siteIdIns,
    @attributeIdIns,
    @siteIdDel,
    @attributeIdDel

WHILE @@sqlstatus != 2
BEGIN
    IF @siteIdDel = null AND @attributeIdDel = null
    BEGIN

        IF (select count(*) FROM DmDdColleCSAttributeXref
            WHERE siteId = @siteIdIns
            AND attributeId = @attributeIdIns) = 0
        AND (SELECT count(*) FROM DmDdAdditionalAttributes
            WHERE siteId = @siteIdIns
            AND attributeId = @attributeIdIns) = 0
        AND (SELECT count(*) FROM DmDdEquivalentAttributes
            WHERE siteId = @siteIdIns
            AND attributeId = @attributeIdIns) = 0
        BEGIN
            DELETE DmDdSpatialDomain
            FROM DmDdSpatialDomain s, inserted i
            WHERE s.siteId = i.siteId
            AND s.attributeId = i.attributeId

            INSERT DmDdSpatialDomain
            SELECT * from deleted

            RAISERROR 30515
            "No reference data exists for updated data in DmDdSpatialDomain,
            updating has been aborted"
        END
    END

```

```

        RETURN
    END

    END /* if @siteIdDel = null and @attributeIdDel = null */

    FETCH updSpatialDomainCS INTO
        @siteIdIns,
        @attributeIdIns,
        @siteIdDel,
        @attributeIdDel

    END /* WHILE */
END
END
RETURN
go

```

3.1.10.13 Trigger: TrigInsDmDdStringType

Trigger Code

```

--*****
--BEGIN PROLOG
--
--TRIGGER NAME:      TrigInsDmDdStringType
--
--TABLE ACCESSED:   DmDdCollECSAttributeXref
--                  DmDdAdditionalAttributes
--                  DmDdStringType
--                  inserted
--
--*****

```

```

CREATE TRIGGER TrigInsDmDdStringType
ON DmDdStringType
FOR INSERT
AS
BEGIN
    DECLARE @attributeId      attIdType,
            @siteId          int,
            @hasIt           int

    BEGIN

```

```

DECLARE insStringTypeCS CURSOR FOR
    SELECT siteId, attributeId
    FROM inserted

OPEN insStringTypeCS

FETCH insStringTypeCS INTO
    @siteId,
    @attributeId

WHILE @@sqlstatus != 2
BEGIN
    EXEC ProcCheckAttriExist @siteId = @siteId,
        @attributeId = @attributeId,
        @hasIt = @hasIt output
    IF @hasIt = 0
    BEGIN
        DELETE DmDdStringType
        FROM DmDdStringType s, inserted i
        WHERE s.siteId = i.siteId
        AND s.attributeId = i.attributeId

        RAISERROR 30515
        "No reference data exists for new record in DmDdStringType, inserting has
been aborted"
        RETURN
    END

    FETCH insStringTypeCS INTO
        @siteId,
        @attributeId
    END /* WHILE */

END
END
RETURN
go

```

3.1.10.14 Trigger: TrigUpdDmDdStringType

Trigger Code

```
--*****
--BEGIN PROLOG
--
--TRIGGER NAME:      TrigUpdDmDdStringType
--
--TABLE ACCESSED:   DmDdCollECSAttributeXref
--                  DmDdStringType
--                  inserted
--                  deleted
--
--*****
CREATE TRIGGER TrigUpdDmDdStringType
ON DmDdStringType
FOR UPDATE
AS
BEGIN
    DECLARE @attributeIdIns      attIdType,
            @siteIdIns        int,
            @attributeIdDel    attIdType,
            @siteIdDel        int
BEGIN
    DECLARE updStringTypeCS CURSOR FOR
        SELECT i.siteId, i.attributeId, d.siteId, d.attributeId
        FROM inserted i, deleted d
        WHERE i.siteId *= d.siteId
        AND i.attributeId *= d.attributeId
    OPEN updStringTypeCS
    FETCH updStringTypeCS INTO
        @siteIdIns,
        @attributeIdIns,
        @siteIdDel,
        @attributeIdDel
    WHILE @@sqlstatus != 2
    BEGIN
        IF @siteIdDel = null AND @attributeIdDel = null
        BEGIN
            IF (select count(*) FROM DmDdCollECSAttributeXref
                WHERE siteId = @siteIdIns
                AND attributeId = @attributeIdIns) = 0
            AND (SELECT count(*) FROM DmDdAdditionalAttributes
```

```

        WHERE siteId = @siteIdIns
        AND attributeId = @attributeIdIns) = 0
    AND (SELECT count(*) FROM DmDdEquivalentAttributes
          WHERE siteId = @siteIdIns
          AND attributeId = @attributeIdIns) = 0
BEGIN
    DELETE DmDdStringType
    FROM DmDdStringType s, inserted i
    WHERE s.siteId = i.siteId
    AND s.attributeId = i.attributeId

    INSERT DmDdStringType
    SELECT * from deleted

    RAISERROR 30515
    "No reference data exists for updated data in DmDdStringType, updating
has been aborted"
    RETURN
END

END /* if @siteIdDel = null and @attributeIdDel = null */

FETCH updStringTypeCS INTO
    @siteIdIns,
    @attributeIdIns,
    @siteIdDel,
    @attributeIdDel

END /* WHILE */
END
END
RETURN
go

```

3.1.11 Stored Procedures

In addition to triggers, the Sybase RDBMS supports the implementation of stored procedures for the purpose of enforcing business rules that ensure data integrity within the database. Stored procedures are parsed and compiled SQL code that reside in the database and may be called by name by an application, trigger or another stored procedure. Table 3-90 contains a summary listing of the stored procedures in the DM Subsystem database including the procedure name and a brief definition of the purpose of the procedure. Following this table is a listing of each stored procedure within the DM Subsystem database.

Table 3-90. Summary List of Stored Procedures (1 of 2)

| Procedure Name | Calls | Called by | Description |
|--------------------------------|----------------------------|--|---|
| ProcCheckAttriExist | Not applicable | DMS custom code | Check for duplication of siteld and attributeld in DmDdCollECSAttributeXref or DmDdAdditionalAttributes or DmDdEquivalentAttributes If duplicated return an error code. |
| ProcCleanUpMappings | Not applicable | DMS custom code | Used to clean up all mappings in the Data Dictionary |
| ProcDeleteAdditionalAttributes | ProcDeleteAttributeRelated | DMS custom code | Delete all related rows in all referenced tables -- when deleting a DmDdAdditionalAttributes row |
| ProcDeleteAttributeRelated | Not applicable | ProcDeleteAdditionalAttributes ProcDeleteCollECSAttributeXref | Delete all related rows in all referenced tables -- for deleting a DmDdCollECSAttributeXref row -- or deleting a DmDdAdditionalAttributes row -- or deleting a DmDdEquivalentAttributes row |
| ProcDeleteCollECSAttributeXref | ProcDeleteAttributeRelated | DMS custom code | Delete all related rows in all referenced tables -- when deleting a DmDdCollECSAttributeXref row |
| ProcDeleteCollection | Not applicable | DMS custom code | Delete all related rows in all referenced tables -- when deleting a DmDdECSCollection row |
| ProcDeleteECSAttributes | Not applicable | DMS custom code | Delete all related rows in all referenceed tables -- when deleting a DmDdECSAttributes row |
| ProcDeleteEquivalentAttributes | Not applicable | DMS custom code | Delete all related rows in all referenced tables -- when deleting a DmDdEquivalentAttributes row |
| ProcDeleteInfoMgr | Not applicable | DMS custom code | Delete all related rows in all referenced tables -- when deleting a DmDdInfoMgr row |

Table 3-90. Summary List of Stored Procedures (2 of 2)

| Procedure Name | Calls | Called by | Description |
|---------------------------|----------------|-----------------|--|
| ProcDeleteInstrument | Not applicable | DMS custom code | Delete all related rows in all referenced tables -- when deleting a DmDdECSInstrument row |
| ProcDeletePlatform | Not applicable | DMS custom code | Delete all related rows in all referenced tables -- when deleting a DmDdECSPlatform row |
| ProcDeleteSensor | Not applicable | DMS custom code | Delete all related rows in all referenced tables -- when deleting a DmDdECSensor row |
| ProcGetCollectionIdSiteId | Not applicable | DMS custom code | Gets all InfoMgrNames for the given collectionId and SiteId from DmDdInfoMgr Table |
| ProcGetInfoMgrList | Not applicable | DMS custom code | Gets all CollectionIds and SiteId from DmDdCollection Table -- for the InfoMgr specified |
| ProcGetInfoMgrURLList | Not applicable | DMS custom code | -- Gets all CollectionIds and SiteId from DmDdCollection Table -- for the InfoMgr specified |

3.1.12 Stored Procedures Listings

3.1.12.1 Procedure: ProcCheckAttriExist

Code

```

CREATE PROC ProcCheckAttriExist
    (@siteId      int,
     @attributeId attIdType,
     @hasIt        int          output)
AS
BEGIN
    IF (SELECT count(*) FROM DmDdCollECSAttributeXref
        WHERE siteId = @siteId
        AND attributeId = @attributeId) = 0
    BEGIN
        IF (SELECT count(*) FROM DmDdAdditionalAttributes
            WHERE siteId = @siteId
            AND attributeId = @attributeId) = 0
    
```

```

BEGIN
    IF (SELECT count(*) FROM DmDdEquivalentAttributes
        WHERE siteId = @siteId
        AND attributeId = @attributeId) = 0
    BEGIN
        SELECT @hasIt = 0
        RETURN
    END
END
SELECT @hasIt = 1
RETURN
END
go

```

3.1.12.2 Procedure: ProcCleanUpMappings

Code

```

--///////////
-- Name : ProcCleanUpMappings
--
-- Description:
--
-- Delete all related records in all referenceing tables for mapping
--
-- Implementation Notes:
--/////////

```

```

CREATE PROC ProcCleanUpMappings
AS

```

```

BEGIN TRAN

```

```

DECLARE @error int

DELETE FROM DmDdKeywordAliasXref
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occured when delete DmDdKeywordAliasXref"

```

```

ROLLBACK TRANSACTION
RETURN
END

DELETE FROM DmDdAttributeXref
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdAttributeXref"
ROLLBACK TRANSACTION
RETURN
END

DELETE DmDdStringDomain
FROM DmDdStringDomain, DmDdCollECSAttributeXref, DmDdInfoMgr,
      DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%IMS"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdCollECSAttributeXref.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdStringDomain.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdStringDomain.attributeId = DmDdCollECSAttributeXref.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringDomain - for ECS dummy attr"
ROLLBACK TRANSACTION
RETURN
END

DELETE DmDdStringType
FROM DmDdStringType, DmDdCollECSAttributeXref, DmDdInfoMgr,
      DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%IMS"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdCollECSAttributeXref.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdStringType.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdStringType.attributeId = DmDdCollECSAttributeXref.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515

```

```

"An error occurred when delete DmDdStringType - for ECS dummy attr"
ROLLBACK TRANSACTION
RETURN
END

DELETE DmDdStringDomain
FROM DmDdStringDomain, DmDdEquivalentAttributes, DmDdInfoMgr,
      DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%SDSRV%"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdEquivalentAttributes.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdEquivalentAttributes.siteId
AND DmDdStringDomain.siteId = DmDdEquivalentAttributes.siteId
AND DmDdStringDomain.attributeId = DmDdEquivalentAttributes.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
"An error occurred when delete DmDdStringDomain - for Equiv dummy attr"
ROLLBACK TRANSACTION
RETURN
END

DELETE DmDdStringType
FROM DmDdStringType, DmDdEquivalentAttributes, DmDdInfoMgr,
      DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%SDSRV%"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdEquivalentAttributes.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdEquivalentAttributes.siteId
AND DmDdStringType.siteId = DmDdEquivalentAttributes.siteId
AND DmDdStringType.attributeId = DmDdEquivalentAttributes.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
"An error occurred when delete DmDdStringType - for Equiv dummy attr"
ROLLBACK TRANSACTION
RETURN
END

DELETE DmDdNumericDomain
FROM DmDdNumericDomain, DmDdCollECSAttributeXref, DmDdInfoMgr,
      DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%IMS"

```

```

AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdCollECSAttributeXref.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdNumericDomain.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdNumericDomain.attributeId = DmDdCollECSAttributeXref.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdNumericDomain - for ECS dummy attr"
    ROLLBACK TRANSACTION
    RETURN
END

DELETE DmDdNumericDomain
FROM DmDdNumericDomain, DmDdEquivalentAttributes, DmDdInfoMgr,
    DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%SDSRV%"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdEquivalentAttributes.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdEquivalentAttributes.siteId
AND DmDdNumericDomain.siteId = DmDdEquivalentAttributes.siteId
AND DmDdNumericDomain.attributeId = DmDdEquivalentAttributes.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdNumericDomain - for Equiv dummy attr"
    ROLLBACK TRANSACTION
    RETURN
END

DELETE DmDdSpatialDomain
FROM DmDdSpatialDomain, DmDdCollECSAttributeXref, DmDdInfoMgr,
    DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%IMS"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdCollECSAttributeXref.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdSpatialDomain.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdSpatialDomain.attributeId = DmDdCollECSAttributeXref.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515

```

```

"An error occurred when delete DmDdSpatialDomain - for ECS dummy attr"
ROLLBACK TRANSACTION
RETURN
END

DELETE DmDdSpatialDomain
FROM DmDdSpatialDomain, DmDdEquivalentAttributes, DmDdInfoMgr,
      DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%SDSRV%"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdEquivalentAttributes.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdEquivalentAttributes.siteId
AND DmDdSpatialDomain.siteId = DmDdEquivalentAttributes.siteId
AND DmDdSpatialDomain.attributeId = DmDdEquivalentAttributes.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
"An error occurred when delete DmDdSpatialDomain - for Equiv dummy attr"
ROLLBACK TRANSACTION
RETURN
END

DELETE DmDdDateTimeDomain
FROM DmDdDateTimeDomain, DmDdCollECSAttributeXref, DmDdInfoMgr,
      DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%IMS"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdCollECSAttributeXref.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdDateTimeDomain.siteId = DmDdCollECSAttributeXref.siteId
AND DmDdDateTimeDomain.attributeId = DmDdCollECSAttributeXref.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
"An error occurred when delete DmDdDateTimeDomain - for ECS dummy attr"
ROLLBACK TRANSACTION
RETURN
END

DELETE DmDdDateTimeDomain
FROM DmDdDateTimeDomain, DmDdEquivalentAttributes, DmDdInfoMgr,
      DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%SDSRV%"
```

```

AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdEquivalentAttributes.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdEquivalentAttributes.siteId
AND DmDdDateTimeDomain.siteId = DmDdEquivalentAttributes.siteId
AND DmDdDateTimeDomain.attributeId = DmDdEquivalentAttributes.attributeId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdDateTimeDomain - for Equiv dummy attr"
    ROLLBACK TRANSACTION
    RETURN
END

DELETE DmDdCollECSAttributeXref
FROM DmDdCollECSAttributeXref, DmDdInfoMgr, DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%IMS"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdCollECSAttributeXref.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdCollECSAttributeXref.siteId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdCollECSAttributeXref"
    ROLLBACK TRANSACTION
    RETURN
END

DELETE DmDdEquivalentAttributes
FROM DmDdEquivalentAttributes, DmDdInfoMgr, DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%SDSRV"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdEquivalentAttributes.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdEquivalentAttributes.siteId
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdEquivalentAttributes"
    ROLLBACK TRANSACTION
    RETURN
END

DELETE DmDdStringDomain

```

```

FROM DmDdStringDomain, DmDdEquivalentAttributes, DmDdInfoMgr,
    DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%IMS%"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdEquivalentAttributes.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdEquivalentAttributes.siteId
AND DmDdStringDomain.siteId = DmDdEquivalentAttributes.siteId
AND DmDdStringDomain.attributeId = DmDdEquivalentAttributes.attributeId
AND equivalentAttributeName="DATASET_ID"
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringDomain - for Equiv dummy attr"
    ROLLBACK TRANSACTION
    RETURN
END

DELETE DmDdStringType
FROM DmDdStringType, DmDdEquivalentAttributes, DmDdInfoMgr,
    DmDdInfoMgrCollXref
WHERE DmDdInfoMgr.infoMgrType LIKE "%IMS%"
AND DmDdInfoMgr.infoMgrName = DmDdInfoMgrCollXref.infoMgrName
AND DmDdInfoMgrCollXref.collectionId = DmDdEquivalentAttributes.collectionId
AND DmDdInfoMgrCollXref.siteId = DmDdEquivalentAttributes.siteId
AND DmDdStringType.siteId = DmDdEquivalentAttributes.siteId
AND DmDdStringType.attributeId = DmDdEquivalentAttributes.attributeId
AND equivalentAttributeName="DATASET_ID"
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringType - for Equiv dummy attr"
    ROLLBACK TRANSACTION
    RETURN
END

DELETE DmDdEquivalentAttributes
WHERE equivalentAttributeName="DATASET_ID"
SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdEquivalentAttributes"
    ROLLBACK TRANSACTION
    RETURN

```

```
END  
COMMIT TRAN  
RETURN  
go
```

3.1.12.3 Procedure: ProcDeleteAdditionalAttributes

Code

```
--||||||||||||||||||||||||||||||||||||  
-- Name : ProcDeleteAdditionalAttributes  
--  
-- Description:  
--  
-- Delete all related records in all referencing tables  
-- when delete a DmDdAdditionalAttributes record  
--  
-- Implementation Notes:  
--||||||||||||||||||||||||||||||||
```

```
create proc ProcDeleteAdditionalAttributes(  
    @attributeId int,  
    @siteId      int,  
    @error       int      output)
```

as

```
BEGIN TRANSACTION
```

```
IF (SELECT count(*) FROM DmDdAdditionalAttributes  
    WHERE attributeId = @attributeId  
        AND siteId = @siteId) = 0
```

```
BEGIN
```

```
raiserror 30515
```

```
"No such AdditionalAttributes exists"
```

```
    ROLLBACK TRANSACTION
```

```
    RETURN
```

```
END
```

```
else
```

```
BEGIN --START DELETE
```

```
    EXEC ProcDeleteAttributeRelated @attributeId = @attributeId,  
                                    @siteId = @siteId,  
                                    @error = @error output
```

```
    IF @error != 0
```

```

BEGIN
    raiserror 30515
    "An error occured when delete Attribute Related"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdAdditionalAttributes
--

    DELETE DmDdAdditionalAttributes
    WHERE attributeId = @attributeId
        AND siteId = @siteId

    SELECT @error = @@error
    IF @error != 0
        BEGIN
            raiserror 30515
            "An error occured when delete DmDdAdditionalAttributes"
            ROLLBACK TRANSACTION
            RETURN
        END
    END -- end of START DELETE

    COMMIT TRANSACTION

RETURN
go

```

3.1.12.4 Procedure: ProcDeleteAttributeRelated

Code

```

--/////////////////////////////////////////////////////////////////////////
-- Name : ProcDeleteAttributeRelated
--
-- Description:
--
-- Delete all related records in all referenceing tables
-- for delete a DmDdCollECSAttributeXref record
-- or delete a DmDdAdditionalAttributes record
-- or delete a DmDdEquivalentAttributes record
--
-- Implementation Notes:
--/////////////////////////////////////////////////////////////////////////

```

```

create proc ProcDeleteAttributeRelated(
    @attributeId int,
    @siteId      int,
    @error       int      output)
as
--
--DmDdAttributeXref
--
    DELETE DmDdAttributeXref
    WHERE attributeId = @attributeId
        AND siteId = @siteId
    OR attributeIdRef = @attributeId
        AND siteIdRef = @siteId

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdAttributeXref"
        ROLLBACK TRANSACTION
        RETURN
    END
--
--DmDdSpatialDomain
--
    DELETE DmDdSpatialDomain
    WHERE attributeId = @attributeId
        AND siteId = @siteId

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdSpatialDomain"
        ROLLBACK TRANSACTION
        RETURN
    END
--
--DmDdNumericDomain
--
    DELETE DmDdNumericDomain
    WHERE attributeId = @attributeId
        AND siteId = @siteId

    SELECT @error = @@error

```

```

IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdNumericDomain"
    ROLLBACK TRANSACTION
    RETURN
END
-- 
--DmDdDateTimeDomain
-- 
    DELETE DmDdDateTimeDomain
    WHERE attributeId = @attributeId
        AND siteId = @siteId

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdDateTimeDomain"
        ROLLBACK TRANSACTION
        RETURN
    END
-- 
--DmDdKeywordAliasXref
-- 
    DELETE DmDdKeywordAliasXref
    WHERE attributeId = @attributeId
        AND siteId = @siteId
    OR attributeIdRef = @attributeId
        AND siteIdRef = @siteId

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdKeywordAliasXref"
        ROLLBACK TRANSACTION
        RETURN
    END
-- 
--DmDdStringDomain
-- 
    DELETE DmDdStringDomain
    WHERE attributeId = @attributeId
        AND siteId = @siteId

```

```

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringDomain"
    ROLLBACK TRANSACTION
    RETURN
END
--DmDdStringType
--
    DELETE DmDdStringType
    WHERE attributeId = @attributeId
        AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringType"
    ROLLBACK TRANSACTION
    RETURN
END
RETURN
go

```

3.1.12. 5 Procedure: ProcDeleteCollECSAttributeXref

Code

```

--/////////////////////////////////////////////////////////////////////////
-- Name : ProcDeleteCollECSAttributeXref
--
-- Description:
--
-- Delete all related records in all referencing tables
-- when delete a DmDdCollECSAttributeXref record
--
-- Implementation Notes:
--/////////////////////////////////////////////////////////////////////////

```

```

create proc ProcDeleteCollECSAttributeXref(
    @attributeId int,
    @siteId      int,

```

```

@error int      output)
as
BEGIN TRANSACTION

IF (SELECT count(*) FROM DmDdCollECSAttributeXref
    WHERE attributeId = @attributeId
        AND siteId = @siteId) = 0
    BEGIN
        raiserror 30515
        "No such CollECSAttributeXref exists"
        ROLLBACK TRANSACTION
        RETURN
    END
else
    BEGIN --START DELETE

        EXEC ProcDeleteAttributeRelated @attributeId = @attributeId,
                                         @siteId = @siteId,
                                         @error = @error output
        IF @error != 0
            BEGIN
                raiserror 30515
                "An error occurred when delete Attribute Related"
                ROLLBACK TRANSACTION
                RETURN
            END
        --
        --DmDdCollECSAttributeXref
        --
        DELETE DmDdCollECSAttributeXref
        WHERE attributeId = @attributeId
            AND siteId = @siteId

        SELECT @error = @@error
        IF @error != 0
            BEGIN
                raiserror 30515
                "An error occurred when delete DmDdCollECSAttributeXref"
                ROLLBACK TRANSACTION
                RETURN
            END
        END -- end of START DELETE
        COMMIT TRANSACTION
    RETURN
go

```

3.1.12.6 Procedure: ProcDeleteCollection

Code

```
--////////////////////////////////////////////////////////////////////////  
-- Name : ProcDeleteCollection  
--  
-- Description:  
--  
-- Delete all related records in all referencing tables  
-- when delete a DmDdECSCollection record  
--  
-- Implementation Notes:  
--////////////////////////////////////////////////////////////////////////  
  
create proc ProcDeleteCollection(  
    @collectionId int,  
    @siteId      int,  
    @error       int      output)  
as  
    BEGIN TRANSACTION  
  
        IF (SELECT count(*) FROM DmDdECSCollection  
            WHERE collectionId = @collectionId  
            AND siteId = @siteId) = 0  
            BEGIN  
                raiserror 30515  
                "No such collection exists"  
                ROLLBACK TRANSACTION  
                RETURN  
            END  
  
        else  
  
            BEGIN --START DELETE  
            --  
            --DmDdTemporalKeywordClass  
            --  
            DELETE DmDdTemporalKeywordClass  
            WHERE collectionId = @collectionId  
            AND siteId = @siteId  
  
            SELECT @error = @@error  
            IF @error != 0  
            BEGIN
```

```

raiserror 30515
"An error occured when delete DmDdTemporalKeywordClass"
ROLLBACK TRANSACTION
RETURN
END
-- 
--DmDdSpatialKeywordClass
-- 
DELETE DmDdSpatialKeywordClass
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occured when delete DmDdSpatialKeywordClass"
    ROLLBACK TRANSACTION
    RETURN
END
-- 
--DmDdCollectionXref
-- 
DELETE DmDdCollectionXref
WHERE collectionIdRef = @collectionId
AND siteIdRef = @siteId
OR collectionIdAgg = @collectionId
AND siteIdAgg = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occured when delete DmDdCollectionXref"
    ROLLBACK TRANSACTION
    RETURN
END
-- 
--DmDdSingleTypeCollection
-- 
DELETE DmDdSingleTypeCollection
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error

```

```

IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdSingleTypeCollection"
    ROLLBACK TRANSACTION
    RETURN
END
-- 
--DmDdMultipleCollection
-- 
DELETE DmDdMultipleCollection
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdMultipleCollection"
    ROLLBACK TRANSACTION
    RETURN
END
-- 
--DmDdKeywordParameterXref
-- 
DELETE DmDdKeywordParameterXref
WHERE keywordId =
    (SELECT keywordId FROM DmDdECSCollKeywordXref
     WHERE collectionId = @collectionId
     AND siteId = @siteId
    )
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdKeywordParameterXref"
    ROLLBACK TRANSACTION
    RETURN
END
-- 
--DmDdECSCollKeywordXref
-- 
DELETE DmDdECSCollKeywordXref

```

```

WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdECSCollKeywordXref"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdSensorXref
-- DELETE DmDdSensorXref
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdSensorXref"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdInstrumentXref
-- DELETE DmDdInstrumentXref
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdInstrumentXref"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdPlatformXref
-- DELETE DmDdPlatformXref

```

```

WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdPlatformXref"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdSpatialDomain
--

DELETE DmDdSpatialDomain
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdSpatialDomain"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdNumericDomain
--

DELETE DmDdNumericDomain
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdNumericDomain"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdDateTimeDomain
--

DELETE DmDdDateTimeDomain

```

```

WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdDateTimeDomain"
    ROLLBACK TRANSACTION
    RETURN
END
--DmDdKeywordAliasXref
--
DELETE DmDdKeywordAliasXref
WHERE collectionId = @collectionId
AND siteId = @siteId
OR collectionIdRef = @collectionId
AND siteIdRef = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdKeywordAliasXref"
    ROLLBACK TRANSACTION
    RETURN
END
--DmDdStringDomain
--
DELETE DmDdStringDomain
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringDomain"
    ROLLBACK TRANSACTION
    RETURN
END
--DmDdStringType

```

```

-- DELETE DmDdStringType
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringType"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdAttributeXref
--

DELETE DmDdAttributeXref
WHERE collectionId = @collectionId
AND siteId = @siteId
OR collectionIdRef = @collectionId
AND siteIdRef = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdAttributeXref"
    ROLLBACK TRANSACTION
    RETURN
END

--DmDdCollECSAttributeXref
--

DELETE DmDdCollECSAttributeXref
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdCollECSAttributeXref"
    ROLLBACK TRANSACTION
    RETURN
END

```

```

--DmDdAdditionalAttributes
--  

    DELETE DmDdAdditionalAttributes  

    WHERE collectionId = @collectionId  

    AND siteId = @siteId  

    SELECT @error = @@error  

    IF @error != 0  

    BEGIN  

        raiserror 30515  

        "An error occurred when delete DmDdAdditionalAttributes"  

        ROLLBACK TRANSACTION  

        RETURN  

    END  

--  

--DmDdEquivalentAttributes
--  

    DELETE DmDdEquivalentAttributes  

    WHERE collectionId = @collectionId  

    AND siteId = @siteId  

    SELECT @error = @@error  

    IF @error != 0  

    BEGIN  

        raiserror 30515  

        "An error occurred when delete DmDdEquivalentAttributes"  

        ROLLBACK TRANSACTION  

        RETURN  

    END  

--  

--DmDdInfoMgrCollXref
--  

    DELETE DmDdInfoMgrCollXref  

    WHERE collectionId = @collectionId  

    AND siteId = @siteId  

    SELECT @error = @@error  

    IF @error != 0  

    BEGIN  

        raiserror 30515  

        "An error occurred when delete DmDdInfoMgrCollXref"  

        ROLLBACK TRANSACTION  

        RETURN  

    END

```

```

--DmDdBoundingRectangle
--  

    DELETE DmDdBoundingRectangle  

    WHERE collectionId = @collectionId  

    AND siteId = @siteId  

    SELECT @error = @@error  

    IF @error != 0  

    BEGIN  

        raiserror 30515  

        "An error occurred when delete DmDdBoundingRectangle"  

        ROLLBACK TRANSACTION  

        RETURN  

    END  

--  

--DmDdRangeDateTime
--  

    DELETE DmDdRangeDateTime  

    WHERE collectionId = @collectionId  

    AND siteId = @siteId  

    SELECT @error = @@error  

    IF @error != 0  

    BEGIN  

        raiserror 30515  

        "An error occurred when delete DmDdRangeDateTime"  

        ROLLBACK TRANSACTION  

        RETURN  

    END  

--  

--DmDdTTemporal
--  

    DELETE DmDdTTemporal  

    WHERE collectionId = @collectionId  

    AND siteId = @siteId  

    SELECT @error = @@error  

    IF @error != 0  

    BEGIN  

        raiserror 30515  

        "An error occurred when delete DmDdTTemporal"  

        ROLLBACK TRANSACTION  

        RETURN  

    END

```

```

--DmDdECSCollection
-- DELETE DmDdECSCollection
WHERE collectionId = @collectionId
AND siteId = @siteId

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdECSCollection"
    ROLLBACK TRANSACTION
    RETURN
END
END -- end of START DELETE

COMMIT TRANSACTION

RETURN
go

```

3.1.12.7 Procedure: ProcDeleteECSAttributes

Code

```

--/////////////////////////////////////////////////////////////////////////
-- Name : ProcDeleteECSAttributes
--
-- Description:
--
-- Delete all related records in all referencing tables
-- when delete a DmDdECSAttributes record
--
-- Implementation Notes:
--/////////////////////////////////////////////////////////////////////////

create proc ProcDeleteECSAttributes(
    @attributeName      char(32),
    @error      int      output)
as
BEGIN TRANSACTION

IF (SELECT count(*) FROM DmDdECSAttributes
    WHERE ECSAttributeName = @attributeName ) = 0

```

```

BEGIN
raiserror 30515
"No such ECSAttribute exists"
    ROLLBACK TRANSACTION
    RETURN
END

else
BEGIN --START DELETE

declare axref_cursor cursor for
    SELECT attributeId, siteId
    FROM DmDdCollECSAttributeXref
    WHERE ECSAttributeName = @attributeName

open axref_cursor

declare @attributeId int,
        @siteId          int

fetch axref_cursor into
    @attributeId,
    @siteId

while @@sqlstatus != 2
begin

    EXEC ProcDeleteCollECSAttributeXref
        @attributeId = @attributeId,
        @siteId = @siteId,
        @error = @error output

    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete CollECSAttributeXref"
        ROLLBACK TRANSACTION
        RETURN
    END

    fetch axref_cursor into
        @attributeId,
        @siteId

end

```

```

DELETE DmDdECSAttributes
WHERE ECSAttributeName = @attributeName

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdECSAttributes"
    ROLLBACK TRANSACTION
    RETURN
END

END -- end of START DELETE

COMMIT TRANSACTION

RETURN
go

```

3.1.12.8 Procedure: ProcDeleteEquivalentAttributes

Code

```

--/////////////////////////////////////////////////////////////////////////
-- Name : ProcDeleteEquivalentAttributes
--
-- Description:
--
-- Delete all related records in all referencing tables
-- when delete a DmDdEquivalentAttributes record
--
-- Implementation Notes:
--/////////////////////////////////////////////////////////////////////////

create proc ProcDeleteEquivalentAttributes(
    @attributeId int,
    @siteId      int,
    @error       int      output)
as
BEGIN TRANSACTION

IF (SELECT count(*) FROM DmDdEquivalentAttributes
    WHERE attributeId = @attributeId
        AND siteId = @siteId) = 0

```

```

BEGIN
raiserror 30515
"No such EquivalentAttributes exists"
    ROLLBACK TRANSACTION
    RETURN
END

else

BEGIN --START DELETE

    EXEC ProcDeleteAttributeRelated @attributeId = @attributeId,
                                    @siteId = @siteId,
                                    @error = @error output
    IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete Attribute Related"
            ROLLBACK TRANSACTION
            RETURN
        END
    --
--DmDdEquivalentAttributes
--
    DELETE DmDdEquivalentAttributes
    WHERE attributeId = @attributeId
        AND siteId = @siteId

    SELECT @error = @@error
    IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdEquivalentAttributes"
            ROLLBACK TRANSACTION
            RETURN
        END
    END -- end of START DELETE

    COMMIT TRANSACTION

RETURN
go

```

3.1.12.9 Procedure: ProcDeleteInfoMgr

Code

```
--////////////////////////////////////////////////////////////////////////  
-- Name : ProcDeleteInfoMgr  
--  
-- Description:  
--  
-- Delete all related records in all referenceing tables  
-- when delete a DmDdInfoMgr record  
--  
-- Implementation Notes:  
--////////////////////////////////////////////////////////////////////////  
  
create proc ProcDeleteInfoMgr(  
    @infoMgrName      char(20),  
    @error            int      output)  
as  
    BEGIN TRANSACTION  
  
    IF (SELECT count(*) FROM DmDdInfoMgr  
        WHERE infoMgrName = @infoMgrName  
        ) = 0  
        BEGIN  
            raiserror 30515  
            "No such InfoMgr exists"  
            ROLLBACK TRANSACTION  
            RETURN  
        END  
  
    else  
  
        BEGIN --START DELETE  
        --  
        --DmDdInfoMgrCollXref  
        --  
        --            DELETE DmDdInfoMgrCollXref  
        WHERE infoMgrName = @infoMgrName  
  
            SELECT @error = @@error  
            IF @error != 0  
            BEGIN  
                raiserror 30515  
                "An error occurred when delete DmDdInfoMgrCollXref"  
            END
```

```

        ROLLBACK TRANSACTION
        RETURN
    END

<-- DmDdInfoMgrXref
<--
        DELETE DmDdInfoMgrXref
        WHERE infoMgrName = @infoMgrName
        OR infoMgrParentName = @infoMgrName

        SELECT @error = @@error
        IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdInfoMgrXref"
            ROLLBACK TRANSACTION
            RETURN
        END

<-- DmDdInfoMgr
<--
        DELETE DmDdInfoMgr
        WHERE infoMgrName = @infoMgrName

        SELECT @error = @@error
        IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdInfoMgr"
            ROLLBACK TRANSACTION
            RETURN
        END
    END -- end of START DELETE

    COMMIT TRANSACTION

    RETURN
    go

```

Procedure: ProcDeleteInstrument

Code

```

--/////////////////////////////////////////////////////////////////////////
-- Name : ProcDeleteInstrument

```

```

-- Description:
--
-- Delete all related records in all referencing tables
-- when delete a DmDdECSInstrument record
--
-- Implementation Notes:
--||||||||||||||||||||||||||||||||||||||

create proc ProcDeleteInstrument(
    @instrumentShortName      char(20),
    @error                      int      output)
as
    BEGIN TRANSACTION

    IF (SELECT count(*) FROM DmDdInstrument
        WHERE InstrumentShortName = @instrumentShortName
        ) = 0
        BEGIN
            raiserror 30515
            "No such Instrument exists"
            ROLLBACK TRANSACTION
            RETURN
        END
    else
        BEGIN --START DELETE
        --
        --DmDdInstrumentXref
        --
            DELETE DmDdInstrumentXref
            WHERE InstrumentShortName = @instrumentShortName

            SELECT @error = @@error
            IF @error != 0
                BEGIN
                    raiserror 30515
                    "An error occurred when delete DmDdInstrumentXref"
                    ROLLBACK TRANSACTION
                    RETURN
                END
        --
        --DmDdInstrumentPlatformXref
        --

```

```

        DELETE DmDdInstrumentPlatformXref
        WHERE InstrumentShortName = @instrumentShortName

        SELECT @error = @@error
        IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdInstrumentPlatformXref"
            ROLLBACK TRANSACTION
            RETURN
        END

        --
        --DmDdOperationModeClass
        --
        DELETE DmDdOperationModeClass
        WHERE InstrumentShortName = @instrumentShortName

        SELECT @error = @@error
        IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdOperationModeClass"
            ROLLBACK TRANSACTION
            RETURN
        END

        --
        --DmDdSensorInstrumentXref
        --
        DELETE DmDdSensorInstrumentXref
        WHERE InstrumentShortName = @instrumentShortName
        SELECT @error = @@error
        IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdSensorInstrumentXref"
            ROLLBACK TRANSACTION
            RETURN
        END

        --
        --DmDdIntInstrumentChar
        --
        DELETE DmDdIntInstrumentChar
        WHERE InstrumentCharacteristicName in

```

```

        (SELECT InstrumentCharacteristicName
         FROM DmDdInstrumentCharacteristic
        WHERE InstrumentShortName = @instrumentShortName)

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdIntInstrumentChar"
    ROLLBACK TRANSACTION
    RETURN
END
--DmDdFloatInstrumentChar
-- DELETE DmDdFloatInstrumentChar
WHERE InstrumentCharacteristicName in
        (SELECT InstrumentCharacteristicName
         FROM DmDdInstrumentCharacteristic
        WHERE InstrumentShortName = @instrumentShortName)

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdFloatInstrumentChar"
    ROLLBACK TRANSACTION
    RETURN
END
--DmDdDateInstrumentChar
-- DELETE DmDdDateInstrumentChar
WHERE InstrumentCharacteristicName in
        (SELECT InstrumentCharacteristicName
         FROM DmDdInstrumentCharacteristic
        WHERE InstrumentShortName = @instrumentShortName)

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdDateInstrumentChar"
    ROLLBACK TRANSACTION
    RETURN

```

```

    END
--

--DmDdStringInstrumentChar
--

    DELETE DmDdStringInstrumentChar
    WHERE InstrumentCharacteristicName in
        (SELECT InstrumentCharacteristicName
         FROM DmDdInstrumentCharacteristic
         WHERE InstrumentShortName = @instrumentShortName)

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdStringInstrumentChar"
        ROLLBACK TRANSACTION
        RETURN
    END
--

--DmDdInstrumentCharacteristic
--

    DELETE DmDdInstrumentCharacteristic
    WHERE InstrumentShortName = @instrumentShortName

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdInstrumentCharacteristic"
        ROLLBACK TRANSACTION
        RETURN
    END
--

--DmDdInstrument
--

    DELETE DmDdInstrument
    WHERE InstrumentShortName = @instrumentShortName

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdInstrument"
        ROLLBACK TRANSACTION
        RETURN
    END

```

```
        END  
END -- end of START DELETE
```

```
COMMIT TRANSACTION
```

```
RETURN
```

```
go
```

3.1.12.10 Procedure: ProcDeletePlatform

Code

```
--||||||||||||||||||||||||||||||||||||  
-- Name : ProcDeletePlatform  
--  
-- Description:  
--  
-- Delete all related records in all referencing tables  
-- when delete a DmDdECSPlatform record  
--  
-- Implementation Notes:  
--|||||||||||||||||||||||||||||||||||
```

```
create proc ProcDeletePlatform(  
    @platformShortName char(20),  
    @error           int      output)
```

```
as
```

```
BEGIN TRANSACTION
```

```
IF (SELECT count(*) FROM DmDdPlatform  
    WHERE PlatformShortName = @platformShortName  
    ) = 0
```

```
    BEGIN
```

```
        raiserror 30515
```

```
        "No such Platform exists"
```

```
        ROLLBACK TRANSACTION  
        RETURN
```

```
    END
```

```
else
```

```
BEGIN --START DELETE
```

```
--  
--DmDdPlatformXref  
--
```

```

        DELETE DmDdPlatformXref
        WHERE PlatformShortName = @platformShortName

        SELECT @error = @@error
        IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdPlatformXref"
            ROLLBACK TRANSACTION
            RETURN
        END
    --
--DmDdInstrumentPlatformXref
--
        DELETE DmDdInstrumentPlatformXref
        WHERE PlatformShortName = @platformShortName

        SELECT @error = @@error
        IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdInstrumentPlatformXref"
            ROLLBACK TRANSACTION
            RETURN
        END
    --
--DmDdIntPlatformChar
--
        DELETE DmDdIntPlatformChar
        WHERE PlatformCharacteristicName in
            (SELECT PlatformCharacteristicName
             FROM DmDdPlatformCharacteristic
             WHERE PlatformShortName = @platformShortName)

        SELECT @error = @@error
        IF @error != 0
        BEGIN
            raiserror 30515
            "An error occurred when delete DmDdIntPlatformChar"
            ROLLBACK TRANSACTION
            RETURN
        END
    --
--DmDdFloatPlatformChar
--

```

```

DELETE DmDdFloatPlatformChar
WHERE PlatformCharacteristicName in
    (SELECT PlatformCharacteristicName
     FROM DmDdPlatformCharacteristic
     WHERE PlatformShortName = @platformShortName)

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdFloatPlatformChar"
    ROLLBACK TRANSACTION
    RETURN
END
--
```

--DmDdDatePlatformChar

```

-- DELETE DmDdDatePlatformChar
WHERE PlatformCharacteristicName in
    (SELECT PlatformCharacteristicName
     FROM DmDdPlatformCharacteristic
     WHERE PlatformShortName = @platformShortName)

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdDatePlatformChar"
    ROLLBACK TRANSACTION
    RETURN
END
--
```

--DmDdStringPlatformChar

```

-- DELETE DmDdStringPlatformChar
WHERE PlatformCharacteristicName in
    (SELECT PlatformCharacteristicName
     FROM DmDdPlatformCharacteristic
     WHERE PlatformShortName = @platformShortName)

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringPlatformChar"
    ROLLBACK TRANSACTION
    RETURN
END

```

```

        ROLLBACK TRANSACTION
        RETURN
    END

<-- --DmDdPlatformCharacteristic
<--
    DELETE DmDdPlatformCharacteristic
    WHERE PlatformShortName = @platformShortName

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdPlatformCharacteristic"
        ROLLBACK TRANSACTION
        RETURN
    END

<-- --DmDdPlatform
<--
    DELETE DmDdPlatform
    WHERE PlatformShortName = @platformShortName

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occurred when delete DmDdPlatform"
        ROLLBACK TRANSACTION
        RETURN
    END
END -- end of START DELETE

    COMMIT TRANSACTION

RETURN
go

```

3.1.12.11 Procedure: ProcDeleteSensor

Code

```
--||||||||||||||||||||||||||||||||||||||||||  
-- Name : ProcDeleteSensor  
--  
-- Description:  
--  
-- Delete all related records in all referenceing tables  
-- when delete a DmDdECSSensor record  
--  
-- Implementation Notes:  
--||||||||||||||||||||||||||||||||||||||  
  
create proc ProcDeleteSensor(  
    @sensorShortName  char(20),  
    @error           int      output)  
as  
    BEGIN TRANSACTION  
  
    IF (SELECT count(*) FROM DmDdSensor  
        WHERE SensorShortName = @sensorShortName  
        ) = 0  
        BEGIN  
            raiserror 30515  
            "No such Sensor exists"  
            ROLLBACK TRANSACTION  
            RETURN  
        END  
  
    else  
  
        BEGIN --START DELETE  
        --  
        --DmDdSensorXref  
        --  
        DELETE DmDdSensorXref  
        WHERE SensorShortName = @sensorShortName  
  
        SELECT @error = @@error  
        IF @error != 0  
        BEGIN  
            raiserror 30515
```

```

        "An error occured when delete DmDdSensorXref"
        ROLLBACK TRANSACTION
        RETURN
    END
--

--DmDdSensorInstrumentXref
--
    DELETE DmDdSensorInstrumentXref
    WHERE SensorShortName = @sensorShortName

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occured when delete DmDdSensorInstrumentXref"
        ROLLBACK TRANSACTION
        RETURN
    END
--

--DmDdIntSensorChar
--
    DELETE DmDdIntSensorChar
    WHERE SensorCharacteristicName in
        (SELECT SensorCharacteristicName
         FROM DmDdSensorCharacteristic
         WHERE SensorShortName = @sensorShortName)

    SELECT @error = @@error
    IF @error != 0
    BEGIN
        raiserror 30515
        "An error occured when delete DmDdIntSensorChar"
        ROLLBACK TRANSACTION
        RETURN
    END
--

--DmDdFloatSensorChar
--
    DELETE DmDdFloatSensorChar
    WHERE SensorCharacteristicName in
        (SELECT SensorCharacteristicName
         FROM DmDdSensorCharacteristic
         WHERE SensorShortName = @sensorShortName)

    SELECT @error = @@error

```

```

IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdFloatSensorChar"
    ROLLBACK TRANSACTION
    RETURN
END
--

--DmDdDateSensorChar
--

DELETE DmDdDateSensorChar
WHERE SensorCharacteristicName in
    (SELECT SensorCharacteristicName
     FROM DmDdSensorCharacteristic
     WHERE SensorShortName = @sensorShortName)

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdDateSensorChar"
    ROLLBACK TRANSACTION
    RETURN
END
--

--DmDdStringSensorChar
--

DELETE DmDdStringSensorChar
WHERE SensorCharacteristicName in
    (SELECT SensorCharacteristicName
     FROM DmDdSensorCharacteristic
     WHERE SensorShortName = @sensorShortName)

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdStringSensorChar"
    ROLLBACK TRANSACTION
    RETURN
END
--

--DmDdSensorCharacteristic
--

DELETE DmDdSensorCharacteristic

```

```

WHERE SensorShortName = @sensorShortName

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdSensorCharacteristic"
    ROLLBACK TRANSACTION
    RETURN
END
--

--DmDdSensor
--

    DELETE DmDdSensor
    WHERE SensorShortName = @sensorShortName

SELECT @error = @@error
IF @error != 0
BEGIN
    raiserror 30515
    "An error occurred when delete DmDdSensor"
    ROLLBACK TRANSACTION
    RETURN
END
END -- end of START DELETE

    COMMIT TRANSACTION

RETURN
go

```

3.1.12.12 Procedure: ProcGetCollectionIdSiteId

Code

```

--|||||||||||||||||||||||||||||||||||||||||
-- Name : ProcGetCollectionIdSiteId
--
-- Description:
--
-- Gets all InfoMgrNames for the given collectionId and SiteId from DmDdInfoMgr Table
--
--
-- Implementation Notes:
--|||||||||||||||||||||||||||||||||

```

```

create proc ProcGetCollectionIdSiteId(@CURRENT char(25))
AS
SET NOCOUNT ON
DECLARE @LEVEL int, @LINE char(25)
CREATE TABLE #STACK (ITEM char(25), LVL int)
CREATE TABLE #STACK1 (ITEM char(25),LVL int)
INSERT INTO #STACK VALUES (@CURRENT,1)
SELECT @LEVEL = 1
WHILE @LEVEL >0
BEGIN
IF EXISTS( SELECT * FROM #STACK WHERE LVL = @LEVEL)
BEGIN
    SELECT @CURRENT =ITEM FROM #STACK WHERE LVL = @LEVEL
    SELECT @LINE = SPACE(@LEVEL -1) + @CURRENT
    --
    PRINT @LINE
    INSERT INTO #STACK1 VALUES (@CURRENT,@LEVEL)

    DELETE FROM #STACK
    WHERE LVL = @LEVEL
    AND ITEM = @CURRENT
    INSERT #STACK
    SELECT infoMgrName, @LEVEL +1
    FROM DmDdInfoMgrXref
    WHERE infoMgrParentName = @CURRENT
    IF @@ROWCOUNT >0 SELECT @LEVEL = @LEVEL +1
END
ELSE SELECT @LEVEL = @LEVEL -1
END
SELECT distinct      a.collectionId,a.siteId,a.ShortName,a.LongName,
                a.VersionID,a.ArchiveCenter
        FROM DmDdECSCollection a, DmDdInfoMgrCollXref b, #STACK1 c
        WHERE (a.collectionId=b.collectionId
        and a.siteId=b.siteId
        and b.infoMgrName=c.ITEM) OR (a.ShortName="L70RWRS")

```

go

3.1.12.13 Procedure: ProcGetInfoMgrList

Code

```
--////////////////////////////////////////////////////////////////////////  
-- Name : ProcGetInfoMgrList  
--  
-- Description:  
--  
-- Gets all CollectionIds and SiteId from DmDdCollection Table  
-- for the InfoMgr specified  
--  
-- Implementation Notes:  
--////////////////////////////////////////////////////////////////////////  
create proc ProcGetInfoMgrList(@collId int, @sitId int)  
AS  
SET NOCOUNT ON  
DECLARE @LEVEL int, @LINE char(25)  
DECLARE @InfoMgr char(25)  
CREATE TABLE #STACK (infoMgr char(25), LVL int)  
CREATE TABLE #STACK1 (infoMgrName char(25), LVL int)  
INSERT #STACK  
SELECT a.infoMgrName,1  
FROM DmDdInfoMgrCollXref a  
WHERE a.collectionId= @collId and a.siteId= @sitId  
  
SELECT @LEVEL = 1  
WHILE @LEVEL >0  
BEGIN  
IF EXISTS( SELECT * FROM #STACK WHERE LVL = @LEVEL)  
BEGIN  
    SELECT @InfoMgr = infoMgr FROM #STACK WHERE LVL = @LEVEL  
    SELECT @LINE = SPACE(@LEVEL -1) + @InfoMgr  
    -- PRINT @LINE  
  
    INSERT INTO #STACK1 VALUES (@InfoMgr,@LEVEL)  
    DELETE FROM #STACK  
        WHERE LVL = @LEVEL  
        AND infoMgr = @InfoMgr  
  
    INSERT #STACK  
        SELECT infoMgrParentName, @LEVEL +1  
        FROM DmDdInfoMgrXref  
        WHERE infoMgrName = @InfoMgr
```

```

IF @@ROWCOUNT >0 SELECT @LEVEL = @LEVEL +1
END
ELSE SELECT @LEVEL = @LEVEL -1
END
SELECT distinct infoMgrName from #STACK1
go

```

3.1.12 14 Procedure: ProcGetInfoMgrURLList

Code

```

--///////////////////////////////
-- Name : ProcGetInfoMgrURLList
--
-- Description:
--
-- Gets all CollectionIds and SiteId from DmDdCollection Table
-- for the InfoMgr specified
--
-- Implementation Notes:
--/////////////////////////////
create proc ProcGetInfoMgrURLList(@collId int, @sitId int)
AS
SET NOCOUNT ON
DECLARE @LEVEL int, @LINE char(25)
DECLARE @InfoMgr char(25)
CREATE TABLE #STACK (infoMgr char(25), LVL int)
CREATE TABLE #STACK1 (infoMgrName char(25), LVL int)
INSERT #STACK
SELECT a.infoMgrName,1
FROM DmDdInfoMgrCollXref a
WHERE a.collectionId= @collId and a.siteId= @sitId

SELECT @LEVEL = 1
WHILE @LEVEL >0
BEGIN
IF EXISTS( SELECT * FROM #STACK WHERE LVL = @LEVEL)
BEGIN
    SELECT @InfoMgr = infoMgr FROM #STACK WHERE LVL = @LEVEL
    SELECT @LINE = SPACE(@LEVEL -1) + @InfoMgr
    --
    PRINT @LINE

    INSERT INTO #STACK1 VALUES (@InfoMgr,@LEVEL)
    DELETE FROM #STACK
        WHERE LVL = @LEVEL

```

```

        AND infoMgr = @InfoMgr

        INSERT #STACK
            SELECT infoMgrParentName, @LEVEL +1
            FROM DmDdInfoMgrXref
            WHERE infoMgrName = @InfoMgr
        IF @@ROWCOUNT >0 SELECT @LEVEL = @LEVEL +1
        END
        ELSE SELECT @LEVEL = @LEVEL -1
    END
    SELECT b.infoMgrName, b.infoMgrType,b.infoMgrUR from #STACK1 a,
DmDdInfoMgr b

```

3.2 Flat File Usage

A flat file is an operating system file that is read and written serially. It is generally independent with respect to other files that exist. There are cases when the implementation of certain persistent data is better suited to a flat file than to a database (e.g., system configuration data, external interface data, log files). DM Subsystem file usage is detailed in this section via file, field, and domain definitions.

3.2.1 File Descriptions

A summary listing of the files in the DM Subsystem is given in Table 3-91 together with a brief description of the file usage. The use of these files will allow the user to change the database schema without recompiling the code. After a change, initialization must be run again.

Table 3-91. Flat File Descriptions (1 of 5)

| File Name | Description |
|------------------------------|---|
| DmDdAddAttrFmt.dat | Additional Attribute Format. Used to process an Additional Attribute – verify attributes and reference to another table containing the format of the attribute. |
| DmDdAddAttrUpdFmt.dat | Additional Attribute Format |
| DmDdAttrGrpFmt.dat | Insert attribute Group format - Used to verify attributes and make sure we have the required ones for an ECS Collection to insert into the database. |
| DmDdBoundRecFmt.dat | Insert Bounding Rectangle Format |
| DmDdCollKeyFmt.dat | Insert collectionkeyword format |
| DmDdCommand.dat | Command – Used to determine the command currently executed and reference to another table containing the format of the command. |
| DmDdDateTimeDmnFmt.dat | Date Time Domain Format |
| DmDdDateTimeDmnupdFmt.dat | Date Time Domain Update Format |
| DmDdDelRelCollFmt.dat | Release Collection Format |
| DmDdDelUnRelCollFmt.dat | Release Collection Format |
| DmDdDeleteAcronymFmt.dat | Delete Acronym Format - Used to verify necessary parts of the command message are present and to retrieve the table(s) name to be updated. Also stores data used to determine whether an argument is “required” or not and a reference to another table containing the required attributes for a given argument. |
| DmDdDeleteAttrGroupFmt.dat | Delete Attribute Group Format |
| DmDdDeleteBoundingRecFmt.dat | Delete Bounding Rectangle Format |
| DmDdDeleteCollFmt.dat | Delete Collection Format |
| DmDdDeleteCollKeyFmt.dat | Delete Collection Keywords Format |
| DmDdDeleteDataOrigFmt.dat | Delete Data Originator Format |
| DmDdDeleteEcsFmt.dat | Delete EcsAttribute Format |
| DmDdDeleteEquivAttrFmt.dat | Delete Equivalent Attributes Xref |
| DmDdDeleteGlossaryFmt.dat | Delete Glossary Format |
| DmDdDeleteIPXrefFmt.dat | Delete Instrument Platform Cross Reference Format |

Table 3-91. Flat File Descriptions (2 of 5)

| File Name | Description |
|------------------------------------|---|
| DmDdDeleteInfoFmt.dat | Delete Info Manager Format |
| DmDdDeleteInfoMgrToCollXrefFmt.dat | Delete Info Manager to Coll Xref Format |
| DmDdDeleteInstXrefFmt.dat | Delete Instrument Xref Format |
| DmDdDeleteKeywordAliasFmt.dat | Delete Keyword Alias Format |
| DmDdDeleteKeywordFmt.dat | Delete Keyword Format |
| DmDdDeleteMetaLevelFmt.dat | Delete Attribute Group Format |
| DmDdDeletePlatXrefFmt.dat | Delete Platform Xref Format |
| DmDdDeleteSIXrefFmt.dat | Delete SensorInstrument Cross Ref Format |
| DmDdDeleteSpatialKeyFmt.dat | Delete Spatial Keyword Format |
| DmDdDeleteTemporalKeyFmt.dat | Delete Temporal Keyword Format |
| DmDdDeleteValidsMappingFmt.dat | Delete Valids Mapping Format |
| DmDdDiscTopFmt.dat | Discipline Topic Parameter Format |
| DmDdDiscTopicUpdFmt.dat | Update Discipline Topic Parameter Format |
| DmDdDisciplineFmt.dat | Discipline Description Format |
| DmDdEcsAttrFmt.dat | ECS Attribute Format |
| DmDdEcsAttrUpdFmt.dat | ECS Attribute Format for update |
| DmDdEcsCollFmt.dat | ECS Collection Format |
| DmDdEcsCollUpdFmt.dat | ECS Collection Format for update |
| DmDdEcsParameterFmt.dat | ECS Parameter Format |
| DmDdEcsParameterUpdFmt.dat | ECS Parameter Format for update |
| DmDdEquivAttrFmt.dat | Equivalent Attribute Format |
| DmDdEquivListFmt.dat | Equivalent Attribute List Format |
| DmDdEquivXrefFmt.dat | Insert Equivalent Attributes Xref Format |
| DmDdIPXrefFmt.dat | Insert Instrument Platform Xref Format |
| DmDdInfoFmt.dat | Insert Info Manager Format |
| DmDdInfoMgrToCollXrefFmt.dat | Insert Info Mgr To Coll Cross Reference Format |
| DmDdInfoParentFmt.dat | Insert Info Manager Parent Format |
| DmDdInfoUpdFmt.dat | Update Info Manager Format |
| DmDdInsRelCollFmt.dat | Release Collection Format |
| DmDdInsertAcronymFmt.dat | Insert Acronym Format |
| DmDdInsertAcronymFmt2.dat | Insert Acronym Format 2 |
| DmDdInsertAttrFmt.dat | Insert Attributes Format |
| DmDdInsertAttrGroupFmt.dat | Insert Attribute Group Format |
| DmDdInsertBoundingRecFmt.dat | Insert Bounding Rectangle |
| DmDdInsertCollFmt.dat | Insert Collection Format |
| DmDdInsertCollKeywordFmt.dat | Insert Collection Keyword Value |
| DmDdInsertDataOrigFmt.dat | Insert Data Originator Format |
| DmDdInsertEcsFmt.dat | Insert EcsAttribute Format |
| DmDdInsertEcsFmt2.dat | Insert EcsAttribute Format 2 |
| DmDdInsertEquivAttrFmt.dat | Insert Equivalent Attributes Xref |
| DmDdInsertGlossaryFmt.dat | Insert Glossary Format |
| DmDdInsertGlossaryFmt2.dat | Insert Glossary Format |
| DmDdInsertIPXrefFmt.dat | Insert Instrument Platform Cross Reference Format |

Table 3-91. Flat File Descriptions (3 of 5)

| File Name | Description |
|------------------------------------|---|
| DmDdInsertInfoFmt.dat | Insert Info Manager Format |
| DmDdInsertInfoFmt2.dat | Insert Info Manager Format |
| DmDdInsertInfoMgrToCollXrefFmt.dat | Insert Info Manager to Coll Xref Format |
| DmDdInsertInstXrefFmt.dat | Insert Instrument Xref Format |
| DmDdInsertKeywordAliasFmt.dat | Insert Keyword Alias Format |
| DmDdInsertKeywordFmt.dat | Insert Keyword Format |
| DmDdInsertMetaLevelFmt.dat | Insert Attribute Group Format |
| DmDdInsertPlatXrefFmt.dat | Insert Platform Xref Format |
| DmDdInsertSensInsXrefFmt.dat | Insert SensorInstrument Cross Ref Format |
| DmDdInsertSensXrefFmt.dat | Insert SensorCross Ref Format |
| DmDdInsertSiteFmt.dat | Insert Site Format |
| DmDdInsertSiteFmt2.dat | Insert Site Format 2 |
| DmDdInsertSpatialKeyFmt.dat | Insert Spatial Keyword Format |
| DmDdInsertTemporalKeyFmt.dat | Insert Temporal Keyword Format |
| DmDdInsertValidsMappingFmt.dat | Insert Valids Mapping Format |
| DmDdInstCharFmt.dat | Insert Instrument Characteristic Format |
| DmDdInstCharUpdFmt.dat | Insert Instrument Characteristic Format for update |
| DmDdInstDateFmt.dat | Instrument Char Date Format |
| DmDdInstDescFmt.dat | Instrument Description Format |
| DmDdInstFloatFmt.dat | Instrument Char Float Format |
| DmDdInstFmt.dat | Instrument Format |
| DmDdInstIntFmt.dat | Instrument Char Int Format |
| DmDdInstOperFmt.dat | Instrument Operation Mode Format |
| DmDdInstStringFmt.dat | Instrument Char String Format |
| DmDdInstUpdFmt.dat | Instrument format for update |
| DmDdInstXrfeFmt.dat | Insert Instrument Corss Reference Fromat |
| DmDdJoinablePairs.dat | Joinable Pairs table: Allows the user to decipher a join list for a specified search |
| DmDdKeywordAliasFmt.dat | Insert Keyword Alias Format |
| DmDdMetaLevelFmt.dat | Insert Attrbute Group Format |
| DmDdMultiTypeCollFmt.dat | Multiple Type Collection Format |
| DmDdNumericDmnFmt.dat | Numeric Domain Format |
| DmDdNumericDmnUpdFmt.dat | Numeric Domain Update Format |
| DmDdParamDescFmt.dat | Parameter Description Format |
| DmDdPlatCharFmt.dat | Platform Characteristic Format |
| DmDdPlatCharUpdFmt | Platform Characteristic Format for update |
| DmDdPlatDateFmt.dat | Platform Char Date Format |
| DmDdPlatDescFmt.dat | Platform Description Format |
| DmDdPlatDescUpdFmt.dat | Platform description Format for update |
| DmDdPlatFloatFmt.dat | Platform Char Float Format |

Table 3-91. Flat File Descriptions (4 of 5)

| File Name | Description |
|---------------------------|---|
| DmDdPlatFmt.dat | Platform Format |
| DmDdPlatIntFmt.dat | Platform Char Int Format |
| DmDdPlatStringFmt.dat | Platform Char String Format |
| DmDdPlatUpdFmt.dat | Platform Format for update |
| DmDdPlatXrefFmt.dat | Insert Platform Cross Reference Format |
| DmDdRangeDateFmt.dat | Range Date Time Format |
| DmDdRangeDateUpdFmt.dat | Range Date Time Format for update |
| DmDdRelCollFmt.dat | Release Collection Format |
| DmDdSIXrefFmt.dat | Insert Sensor Instrument Xref Format |
| DmDdSKeyFmt.dat | Insert Spatial keyword Format |
| DmDdSensCharFmt.dat | Sensor Characteristic Format |
| DmDdSensCharUpdFmt.dat | Sensor Characteristic Format for update |
| DmDdSensDateFmt.dat | Sensor Char Date Format |
| DmDdSensDescFmt.dat | Sensor Description Format |
| DmDdSensDescUpdFmt.dat | Sensor description Format for update |
| DmDdSensFloatFmt.dat | Sensor Char Float Format |
| DmDdSensFmt.dat | Sensor Format |
| DmDdSensIntFmt.dat | Sensor Char Int Format |
| DmDdSensStringFmt.dat | Sensor Char String Format |
| DmDdSensUpdFmt.dat | Sensor Format for update |
| DmDdSensXrefFmt.dat | Insert Sensor Cross Reference Format |
| DmDdSingleTypeCollFmt.dat | Single Type Collection Format |
| DmDdSpatDmnFmt.dat | Spatial Domain Format |
| DmDdSpatKeyFmt.dat | Spatial Key Format for update |
| DmDdStringDmnFmt.dat | String Domain Format |
| DmDdStringDmnUpdFmt.dat | String Domain Format for Update |
| DmDdTkeyFmt.dat | Insert temporal Keyword Fromat |
| DmDdTableArgInfo.dat | Used to specify if the Collection Id, Site Id, attribute Id, and Keyword Id are required |
| DmDdTableNameList.dat | List of format file names under different specified levels. |
| DmDdTableNameXref.dat | Cross-reference table: - Serves two purposes: - 1) allows the user to determine the database argument name based on the command argument and table names - 2) Allows the user to determine which if the command arguments/db |
| DmDdTempFmt.dat | Temporal Format |
| DmDdTempKeyFmt.dat | Temporal Keyword Format |
| DmDdTempKeyUpdFmt.dat | Temporal Keyword Format for Update |

Table 3-91. Flat File Descriptions (5 of 5)

| File Name | Description |
|-----------------------------|---------------------------------|
| DmDdTTempUpdFmt.dat | Temporal Format for Update |
| DmDdtermDescFmt.dat | Term Description Format |
| DmDdTopicDescFmt.dat | Topic Description Format |
| DmDdUpdateAcronymFmt.dat | Update Acronym Format |
| DmDdUpdateAttrGroupFmt.dat | Update Attribute Group Format |
| DmDdUpdateAttrGroupFmt2.dat | Update attribute Group 2 Format |
| DmDdUpdateCollFmt.dat | Update Collection Format |
| DmDdUpdateDataOrigFmt.dat | Update Data Originator Format |
| DmDdUpdateEcsFmt.dat | Update ECS Attrbute Format |
| DmDdUpdateEcsFmt2.dat | Update ECS Attrbute Format 2 |
| DmDdUpdateGlossaryFmt.dat | Update Glossary Format |
| DmDdUpdateInfoFmt.dat | Update Info Manager Format |
| DmDdUpdateKeywordFmt.dat | Update keyword Format |
| DmDdUpdateMetaLevelFmt.dat | Update Attribute Group Format |
| DmDdUpdateMetaLevelFmt2.dat | Update Attribute Group Format 2 |
| DmDdValidsMappingFmt.dat | Insert Attribute Group Fromat |
| DmDdVarDescFmt.dat | Variable Description Format |

3.2.2 Field Specifications

Brief specifications of the fields present within the DM Subsystem flat files are contained in Table 3-92. Files with the same fields are grouped together alphabetically.

Table 3-92. Flat File Field Specifications

| File Name | Field Name | Description |
|------------------------------------|----------------------|--|
| DmDdDelRelCollFmt.dat | Attribute (Arg) Name | Argument names associated with the actual database argument names via the cross-reference file: DmDdTableNameXref.dat |
| DmDdDelUnRelCollFmt.dat | Database Table Name | |
| DmDdDeleteAcronymFmt.dat | Req | Name of the related database table |
| DmDdDeleteAttrGroupFmt.dat | Mult | Specify if the argument is required |
| DmDdDeleteBoundingRecFmt.dat | Case | |
| DmDdDeleteCollFmt.dat | Grp | Specify if multiple instance allowed |
| DmDdDeleteCollKeyFmt.dat | | |
| DmDdDeleteDataOrigFmt.dat | | |
| DmDdDeleteEcsFmt.dat | | |
| DmDdDeleteEquivAttrFmt.dat | | |
| DmDdDeleteGlossaryFmt.dat | | |
| DmDdDeleteIPXrefFmt.dat | | |
| DmDdDeleteInfoFmt.dat | | |
| DmDdDeleteInfoMgrToCollXrefFmt.dat | | |

| File Name | Field Name | Description |
|------------------------------------|-------------------|--|
| DmDdDeleteInstXrefFmt.dat | | Grouping Information |
| DmDdDeleteKeywordAliasFmt.dat | | |
| DmDdDeleteKeywordFmt.dat | | Group number that this entry is in; Can be any number greater than 0 |
| DmDdDeleteMetaLevelFmt.dat | | |
| DmDdDeletePlatXrefFmt.dat | | |
| DmDdDeleteSIXrefFmt.dat | X-ref Db Table | The table which specifies the argument format |
| DmDdDeleteSpatialKeyFmt.dat | | |
| DmDdDeleteTemporalKeyFmt.dat | | |
| DmDdDeleteValidsMappingFmt.dat | Attribute Name | Cross Reference table which needs to be updated |
| DmDdEquivXrefFmt.dat | | |
| DmDdInsertAcronymFmt.dat | | Name of attribute field which needs to be verified |
| DmDdInsertAcronymFmt2.dat | | |
| DmDdInsertAttrFmt.dat | | |
| DmDdInsertAttrGroupFmt.dat | | |
| DmDdInsertBoundingRecFmt.dat | | |
| DmDdInsertCollFmt.dat | | |
| DmDdInsertCollKeywordFmt.dat | | |
| DmDdInsertDataOrigFmt.dat | | |
| DmDdInsertEcsFmt.dat | | |
| DmDdInsertEquivAttrFmt.dat | | |
| DmDdInsertGlossaryFmt.dat | | |
| DmDdInsertIPXrefFmt.dat | | |
| DmDdInsertInfoFmt.dat | | |
| DmDdInsertInfoMgrToCollXrefFmt.dat | | |
| DmDdInsertInstXrefFmt.dat | | |
| DmDdInsertKeywordAliasFmt.dat | | |
| DmDdInsertKeywordFmt.dat | | |
| DmDdInsertMetaLevelFmt.dat | | |
| DmDdInsertPlatXrefFmt.dat | | |
| DmDdInsertSIXrefFmt.dat | | |
| DmDdInsertSpatialKeyFmt.dat | | |
| DmDdInsertTemporalKeyFmt.dat | | |
| DmDdInsertValidsMappingFmt.dat | | |
| DmDdKeywordAliasFmt.dat | | |
| DmDdUpdateAcronymFmt.dat | | |
| DmDdUpdateAttrGroupFmt.dat | | |
| DmDdUpdateCollFmt.dat | | |
| DmDdUpdateDataOrigFmt.dat | | |
| DmDdUpdateEcsFmt.dat | | |
| DmDdUpdateGlossaryFmt.dat | | |
| DmDdUpdateInfoFmt.dat | | |
| DmDdUpdateKeywordFmt.dat | | |
| DmDdUpdateMetaLevelFmt.dat | | |

| File Name | Field Name | Description |
|------------------------------|----------------------|--|
| DmDdAddAttrFmt.dat | Attribute (Arg) Name | Argument names associated with the actual database argument names via the cross-reference file: DmDdTalbeNameXref.dat |
| DmDdAddAttrUpdFmt.dat | | |
| DmDdAttrGrpFmt.dat | | |
| DmDdBoundRecFmt.dat | | |
| DmDdCollKeyFmt.dat | | |
| DmDdCommand.dat | Database Table Name | |
| DmDdDateTimeDmnFmt.dat | | |
| DmDdDateTimeDmnupdFmt.dat | Req | Name of the related database table |
| DmDdDiscTopFmt.dat | Mult | Specify if the argument is required |
| DmDdDiscTopicUpdFmt.dat | Case | Specify if multiple instance allowed |
| DmDdDisciplineFmt.dat | Grp | |
| DmDdEcsAttrFmt.dat | Format Table | Grouping Information |
| DmDdEcsAttrUpdFmt.dat | | |
| DmDdEcsCollFmt.dat | | |
| DmDdEcsCollUpdFmt.dat | | |
| DmDdEcsParameterFmt.dat | | |
| DmDdEcsParameterUpdFmt.dat | | |
| DmDdEquivAttrFmt.dat | | |
| DmDdEquivListFmt.dat | | |
| DmDdEquivXrefFmt.dat | | |
| DmDdIPXrefFmt.dat | | |
| DmDdInfoFmt.dat | | The table which specifies the argument format |
| DmDdInfoMgrToCollXrefFmt.dat | | |
| DmDdInfoParentFmt.dat | | |
| DmDdInfoUpdFmt.dat | | |
| DmDdInsertAcronymFmt2.dat | | |
| DmDdInsertSiteFmt2.dat | | |
| DmDdInstCharFmt.dat | | |
| DmDdInstCharUpdFmt.dat | | |
| DmDdInstDateFmt.dat | | |
| DmDdInstDescFmt.dat | | |
| DmDdInstFloatFmt.dat | | |
| DmDdInstFmt.dat | | |
| DmDdInstIntFmt.dat | | |
| DmDdInstOperFmt.dat | | |
| DmDdInstStringFmt.dat | | |
| DmDdInstUpdFmt.dat | | |
| DmDdInstXfeFmt.dat | | |
| DmDdMetaLevelFmt.dat | | |
| DmDdMultiTypeCollFmt.dat | | |
| DmDdNumericDmnFmt.dat | | |
| DmDdNumericDmnUpdFmt.dat | | |
| DmDdParamDescFmt.dat | | |
| DmDdPlatCharFmt.dat | | |
| DmDdPlatCharUpdFmt | | |
| DmDdPlatDateFormat.dat | | |
| DmDdPlatDescFmt.dat | | |
| DmDdPlatDescUpdFmt.dat | | |

| File Name | Field Name | Description |
|-----------------------|-------------------|--|
| DmDdCommand.dat | Command | Name of the command used to determine the command currently being executed and reference to another table containing the format fo the command |
| | Format Table | Format file name |
| | Special | Used to specify the type of special cases: None, replace, NewList, NewList/Replace |
| DmDdJoinablePairs.dat | Table Name | Name of the Database Table 1 |
| | Db Argument | Attribute Name in Table 1 |
| | Table Name | Name of the Database Table 2 |
| | Db Argument | Attribute Name in Table 2 |
| DmDdTableArgInfo.dat | Table | Name of the Database Table |
| | Collection Id | Specify if Collection Id is required |
| | Site Id | Specify if Siteid is required |
| | Attribute Id | Specify if attribute id is required |
| | Keyword Id | Specify of keyword id is required |
| | | |
| DmDdTalbeNameList.dat | LEVEL 1 | Tells initializer the level for this file is 1 |
| | LEVEL 2 | Tells initializer the level for this file is 2 |
| | LEVEL 3 | Tells initializer the level for this file is 3 |

| File Name | Field Name | Description |
|-----------------------|---|---|
| DmDdTableNameXref.dat | Table Command Argument DB Argument Primary | Name of the Database table The command argument name The database argument name Specify if the argument is the primary key |

3.2.3 Domain Definitions

Domain definitions specify the data type and valid content of fields within a file (e.g., specific values for a limited set of data, ranges of numeric data, units of measure for applicable data). This information is generally used by software to edit incoming data for validity prior to writing or changing data within the file. Use of domain values in updating (adding and changing) records within files preserves the integrity of the data within the file.

To create flat files for the DM subsystem, the following format rules should be followed:

- Table format rules:
 - 1) Blank lines are allowed.
 - 2) Comments are designated by “##” as the first non-whitespace character.
 - 3) The level must be the first non-comment/non-blank line in the file.
 - 4) The lines must not be longer than the maximum prescribed in the software (currently 150).
 - 5) Preceding/trailing blanks will be stripped off.
 - 6) If tables fields are added/deleted, then need to be added/deleted from the initialize functions.
 - 7) If the Format Table is specified for level 3, then the Database Table must also be specified.
 - 8) The first 7 characters of the file name determine (for level 2 tables) what type of command it is:
 - DmDdIns ... = ins
 - DmDdUpd ... = Update

- DmDddel ... = Delete.
- Argument/Parametr Names

They are specified by the user. They are associated with the actual database argument names via the cross-reference file: DmDdTableNameXref.dat.

- Level

Tells the initializer the level for this file (1 to 3), 1 being the highest.

- Req

Is this argument required? (Yes/No/-)

“-” indicates that this is in a group, so look to the group case to find out the required status.

- Mult

Are multiple instance (more than 1) allowed? Yes/No.

- Format

The table which specifies the argument format. Special processing is hard-coded inside process message.

- X-Ref

Specifies the cross-reference table which needs to be updated.

-Attr Name

Name of attribute field which needs to be verified.

Special Case: To handle a two-table join, this field can be set (for delete only) to JOIN1 or JOIN2. JOIN1 indicates the primary table that will have rows deleted where JOIN1 table arg name = xyz and the JOIN2 table arg name = abc (xyz and abc supplied in GL Parameterlist). The JOIN1 entry should be specified first in this table.

- Case

0=No grouping

1= It is not required that any be present; more than one cannot be present e.g. 0 or 1 present.

2= It is not required that any be present; More than one can be present e.g. 0 or more present.

3 = It is required that one be present; Exactly one and only one must be present e.g 1 present.

4 = It is required that one be present; More than one can be present e.g.>=1 present.

9 = SPECIAL processing for these fields

- Grp/Group

Can be any number greater than 0; It is applicable only within this table. It is ignored for Case 0. Groups can have two or more entries.

4. Performance and Tuning Factors

4.1 Indexes

An index provides a means of locating a row in a database table based on the value of a specific column(s), without having to scan all data in the table. When properly implemented, indexes can significantly decrease the time it takes to retrieve data, thereby increasing performance. Sybase allows the definition of two types of indexes, clustered and non-clustered.

In a clustered index, the rows in a database table are physically stored in sequence-determined by the index. Clustered indexes are particularly useful, when the data is frequently retrieved in sequential order. Only one clustered index may be defined per table.

Non-clustered indexes differ from their clustered counterpart, in that, data is not physically stored in sorted order—newly added rows are stored at the end of the related database table.

A key of the types of indexes found in Data Management is provided in Table 4-1 Index Type Key. A list a description of each of the defined indexes is given in Table 4-2 Index List

Table 4-1 Index Type Key

| Index Type Key | Description |
|----------------|---|
| PK | Primary Key |
| FK | Foreign Key |
| U | Unique - Only one for the column code combination |
| C | Clustered or non-clustered index |
| Sort | ASC (ascending) or DESC (descending) order |

Table 4-2 Index List (1 of 3)

| Table Name | Index Code | Column Code | Index Type | | | | |
|--------------------------|-----------------------------|------------------------------|------------|----|---|---|------|
| | | | PK | FK | U | C | Sort |
| DmDbVersions | PK_MSDBVERSIONS | schemaVersionID | Y | N | Y | Y | ASC |
| DmDdAcronym | pk_dmddacronym | acronymName | Y | N | Y | Y | ASC |
| DmDdAdditionalAttributes | pk_dmddadditionalattributes | siteId | Y | N | Y | Y | ASC |
| DmDdAttributeXref | pk_dmddattributexref | attributeId | | | | | ASC |
| | | siteId | Y | N | Y | Y | ASC |
| | | attributeId | | | | | ASC |
| | | siteIdRef | | | | | ASC |
| | | attributeIdRef | | | | | ASC |
| DmDdBoundingRectangle | pk_dmddboundingrectangle | collectionId | Y | N | Y | Y | ASC |
| | | siteId | | | | | |
| | | WestBoundingCoordinate | | | | | |
| | | EastBoundingCoordinate | | | | | |
| | | NorthBoundingCoordinate | | | | | |
| | | SouthBoundingCoordinate | | | | | |
| DmDdCollECSAttributeXref | pk_dmddcollecsattributexref | siteId | Y | N | Y | Y | ASC |
| DmDdCollectionXref | pk_dmddcollectionxref | attributeId | | | | | ASC |
| | | collectionIdRef | Y | N | Y | Y | ASC |
| | | siteIdRef | | | | | |
| | | collectionIdAgg | | | | | |
| | | siteIdAgg | | | | | |
| DmDdDateInstrumentChar | pk_dmdddateinstrumentchar | InstrumentCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdDatePlatformChar | pk_dmddateplatformchar | PlatformCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdDateSensorChar | pk_dmddatesensorchar | SensorCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdDateTimeDomain | pk_dmddatetimesdomain | siteId | Y | N | Y | Y | ASC |
| DmDdECSAttributes | pk_dmddecsattributes | attributeId | | | | | ASC |
| DmDdECSCollection | pk_dmddecscollection | ECSAttributeName | Y | N | Y | Y | ASC |
| | | collectionId | Y | N | Y | Y | ASC |
| | | siteId | | | | | |
| DmDdECSCollKeywordXref | pk_dmddeccollkeywordxref | keywordId | Y | N | Y | Y | ASC |
| | | siteId | | | | | |
| DmDdECSDiscipline | pk_dmddecsdiscipline | ECSDisciplineKeyword | Y | N | Y | Y | ASC |
| DmDdECSParameterDetails | pk_dmddecsparameterdetails | ECSParameterKeyword | Y | N | Y | Y | ASC |
| DmDdECSTerm | pk_dmddecsterm | ECSTermKeyword | Y | N | Y | Y | ASC |
| DmDdECSTopic | pk_dmddecstopic | ECSTopicKeyword | Y | N | Y | Y | ASC |
| DmDdECSVariable | pk_dmddecsvariable | ECSVariableKeyword | Y | N | Y | Y | ASC |
| DmDdEquivalentAttributes | pk_dmdequivalentattributes | siteId | Y | N | Y | Y | ASC |
| | | attributeId | | | | | |
| DmDdFloatInstrumentChar | pk_dmddfloatinstrumentchar | InstrumentCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdFloatPlatformChar | pk_dmddfloatplatformchar | PlatformCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdFloatSensorChar | pk_dmddfloatsensorchar | SensorCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdGlossary | pk_dmddglossary | GlossaryName | Y | N | Y | Y | ASC |
| DmDdGroup | pk_dmddgroup | groupName | Y | N | Y | Y | ASC |
| DmDdGroupXref | pk_dmddgroupxref | groupName | Y | N | Y | Y | ASC |
| | | groupParentName | | | | | |
| DmDdInfoMgr | pk_dmddinfomgr | infoMgrName | Y | N | Y | Y | ASC |
| DmDdInfoMgrCollXref | pk_dmddinfomgrcollxref | collectionId | Y | N | Y | Y | ASC |
| | | siteId | | | | | |
| | | infoMgrName | | | | | |

Table 4-2 Index List (2 of 3)

| Table Name | Index Code | Column Code | Index Type | | | | |
|------------------------------|--------------------------------|--|------------|----|---|---|------|
| | | | PK | FK | U | C | Sort |
| DmDdInfoMgrXref | pk_dmddinfomgrxref | infoMgrName infoMgrParentName | Y | N | Y | Y | ASC |
| DmDdInstrument | pk_dmddinstrument | InstrumentShortName | Y | N | Y | Y | ASC |
| DmDdInstrumentCharacteristic | pk_dmddinstrumentcharacteristi | InstrumentCharacteristicName | Y | N | Y | Y | ASC |
| DmDdInstrumentPlatformXref | pk_dmddinstrumentplatformxref | PlatformShortName InstrumentShortName | Y | N | Y | Y | ASC |
| DmDdInstrumentXref | pk_dmddinstrumentxref | collectionId siteId | Y | N | Y | Y | ASC |
| DmDdIntInstrumentChar | pk_dmddintinstrumentchar | InstrumentShortName | Y | Y | Y | Y | ASC |
| DmDdIntPlatformChar | pk_dmddintplatformchar | InstrumentCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdIntSensorChar | pk_dmddintsensorchar | PlatformCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdKeywordAliasXref | pk_dmddkeywordaliasxref | SensorCharacteristicName siteId | Y | N | Y | Y | ASC |
| | | attributeId keywordName siteIdRef | | | | | |
| | | attributeIdRef keywordNameRef | | | | | |
| DmDdKeywordParameterXref | pk_dmddkeywordparameterxref | keywordId siteId | Y | N | Y | Y | ASC |
| DmDdLevelGroupXref | pk_dmddlevelgroupxref | ECSParameterKeyword levelId | Y | N | Y | Y | ASC |
| DmDdMetadataLevel | pk_dmddmetadatalevel | groupName | Y | N | Y | Y | ASC |
| DmDdMultipleCollection | pk_dmddmultiplecollection | levelId collectionId | Y | Y | Y | Y | ASC |
| DmDdNumericDomain | pk_dmddnumericdomain | siteId | Y | N | Y | Y | ASC |
| DmDdOperationModeClass | pk_dmddoperationmodeclass | siteId attributeId | Y | N | Y | Y | ASC |
| DmDdPlatform | pk_dmddplatform | OperationMode InstrumentShortName | Y | N | Y | Y | ASC |
| DmDdPlatformCharacteristic | pk_dmddplatformcharacteristic | PlatformShortName | Y | N | Y | Y | ASC |
| DmDdPlatformXref | pk_dmddplatformxref | PlatformCharacteristicName collectionId | Y | N | Y | Y | ASC |
| | | siteId | | | | | |
| DmDdRangeDateTime | pk_dmddrangedatetime | PlatformShortName collectionId | Y | N | Y | Y | ASC |
| | | siteId | | | | | |
| DmDdSensor | pk_dmddsensor | RangeBeginningDate RangeBeginningTime | Y | N | Y | Y | ASC |
| DmDdSensorCharacteristic | pk_dmddsensorcharacteristic | SensorShortName | Y | N | Y | Y | ASC |
| DmDdSensorInstrumentXref | pk_dmddsensorinstrumentxref | SensorCharacteristicName | Y | N | Y | Y | ASC |
| DmDdSensorXref | pk_dmddsensorxref | InstrumentShortName collectionId | Y | N | Y | Y | ASC |
| | | siteId | | | | | |
| DmDdSingleTypeCollection | pk_dmddsingletypecollection | SensorShortName collectionId | Y | Y | Y | Y | ASC |
| | | siteId | | | | | |

Table 4-2 Index List (3 of 3)

| Table Name | Index Code | Column Code | Index Type | | | | |
|--------------------------|-----------------------------|--|------------|----|---|---|------|
| | | | PK | FK | U | C | Sort |
| DmDdSite | pk_dmddsite | siteId | Y | N | Y | Y | ASC |
| DmDdSpatialDomain | pk_dmddspatialdomain | siteId attributeId collectionId siteId SpatialKeyword | Y | N | Y | Y | ASC |
| DmDdSpatialKeywordClass | pk_dmddspatialkeywordclass | siteId attributeId keywordName | Y | N | Y | Y | ASC |
| DmDdStringDomain | pk_dmddstringdomain | InstrumentCharacteristicName PlatformCharacteristicName SensorCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdStringInstrumentChar | pk_dmddstringinstrumentchar | InstrumentCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdStringPlatformChar | pk_dmddstringplatformchar | PlatformCharacteristicName | Ys | Y | Y | Y | ASC |
| DmDdStringSensorChar | pk_dmddstringsensorchar | SensorCharacteristicName | Y | Y | Y | Y | ASC |
| DmDdStringType | pk_dmddstringtype | siteId attributeId collectionId siteId collectionId siteId TemporalKeyword | Y | N | Y | Y | ASC |
| DmDdTemporal | pk_dmddtemporal | siteId attributeId collectionId siteId | Y | Y | Y | Y | ASC |
| DmDdTemporalKeywordClass | pk_dmddtemporalkeywordclass | collectionId siteId | Y | N | Y | Y | ASC |

4.2 Segments

Sybase supports the declaration of segments. A segment is a named pointer to a storage device(s). Segments are used to physically allocate a database object to a particular storage device. Segments defined for the DM and all other subsystem databases are described in Table 4-2.

Table 4-3. Segment Descriptions

| Segment Name | Description |
|---------------|--|
| default | Default data segment used if no other segment specified in the create statement. |
| logsegment | SYSLOGS, Transaction Logs |
| systemsegment | System tables and indexes. |
| DMSOPSDAT01 | DMS OPS mode data segment. |
| DMSOPSIDX01 | DMS OPS mode index segment. |
| DMSTS1DAT01 | DMS TS1 mode data segment. |
| DMSTS1IDX01 | DMS TS1 mode index segment. |
| DMSTS2DAT01 | DMS TS2 mode data segment. |
| DMSTS2IDX01 | DMS TS2 mode index segment. |

4.3 Named Caches

A cache is a block of memory that is used by Sybase to retain and manage pages that are currently being processed. By default, each database contains three caches:

Data cache – retains most recently accessed data and index pages

Procedure cache – retains most recently accessed stored procedure pages

User transaction log cache – transaction log pages that have not yet been written to disk for each user

The size of each of these default caches is a configurable item which must be managed on a per DAAC basis. These caches may be increased or decreased by the DAAC DBA as needed.

The data cache can be further subdivided into named caches. A *named cache* is a block of memory that is named and used by the DBMS to store data pages for select tables and/or indexes. Assigning a database table to named cache causes accessed pages to be loaded into memory and retained. The named cache does not need to be allocated to accommodate the entire database table since the DBMS manages the cache according to use. Named caches greatly increase performance by eliminating the time associated for disk input and output (I/O). There are no named caches that are currently defined for the DM Subsystem database. Named caches may be defined as the memory usage of the DM database becomes more well known and the DAACs move into an operational environment. As named caches are defined this portion of the document will be updated.

5. Database Security

5.1 Approach

The database security discussed within this section is bounded to security implementation within the Sybase SQL Server DBMS. A Sybase general approach to security is adopted as illustrated in Figure 5-1.

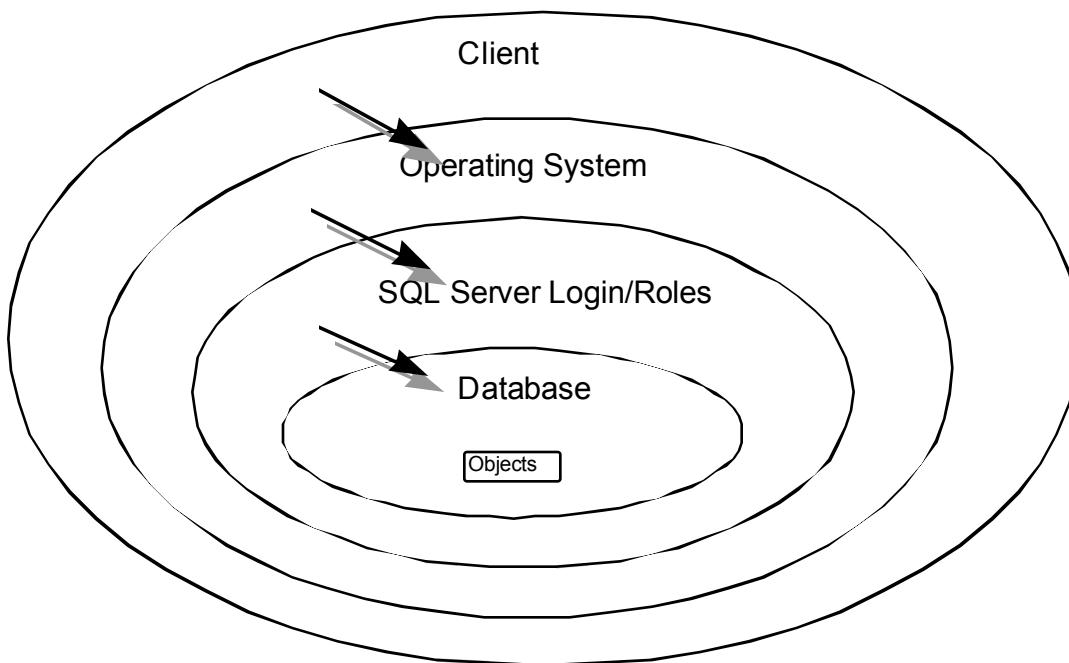


Figure 5-1. Sybase General Approach to SQL Server Security²

5.2 Initial Users

The client (user) requires a SQL Server login to access the DBMS. The login is assigned to a user with certain related permissions for gaining access to particular objects (e.g., database tables, views, commands) within the database. The System Administrator may grant or revoke objects permissions for a login individually or based on defined group or roles.

² Reference Sybase Student Guide: *Advanced SQL Server Administration*.

5.3 Groups

Groups are a means of logically associating users with similar data access needs. Once a group has been defined, object and command permissions can be granted to that group. A user who is member of a group inherits all of the permissions granted to that group. No groups have been initially defined in the DM Subsystem “EcDmDictService” default database. The DAACs should define database groups to support the database security requirements of their individual DAACs. Security for local DAAC users would then be controlled by assigning each user to the appropriate group.

5.4 Roles

Roles were introduced in Sybase to allow a structured means for granting users the permissions needed to perform standard database administration activities and also provide a means for easily identifying such users. There are six pre-defined roles that may be assigned to a user. A definition of each of these roles follows as well as a description of the types of activities that may be performed by each role.

System Administrator (*sa_role*): This role is used to grant a specific user permissions needed to perform standard system administrator duties including:

- installing SQL server and specific SQL server modules
- managing the allocation of physical storage
- tuning configuration parameters
- creating databases

Site Security Officer (*sso_role*): This role is used to grant a specific user the permissions needed to maintain SQL server security including:

- adding server logins
- administrating passwords
- managing the audit system
- granting users all roles except the *sa_role*

Operator (*oper_role*): This role is used to grant a specific user the permissions needed to perform standard functions for the database including:

- dumping transactions and databases
- loading transactions and databases

Navigator (*navigator_role*): This role is used to grant a specific user the permissions needed to manage the navigation server.

Replication (*replication_role*): This role is used to grant a specific user the permissions needed to manage the replication server.

Sybase Technical Support (*sybase_ts_role*): This role is used to grant a specific user the permissions needed to execute *database consistency checker* (*dbcc*), a Sybase supplied utility supporting commands that are normally outside of the realm of routine system administrator activities.

The DAACs should review these roles and assign them to the appropriate login and/or groups.

5.5 Login/Group Object Permissions

During initial database installation logins used by the ECS custom code were created and assigned permissions for access to the DM Subsystem database. In addition, special database installation login, *dms_role*, was created to support database installation needs. For each login, the level of access is limited to that associated with their login, group or assigned group/role. Object Permissions are set within the installation scripts of the DM Subsystem for each object and group/role.

Permissions are identified in Table 5-1. A specification of the object permissions is contained in Table 5-2.

Table 5-1. Permission Key

| Permission | Description |
|------------|-------------|
| A | All |
| S | Select |
| I | Insert |
| U | Update |
| D | Delete |
| E | Execute |

Table 5-2. Object Permissions

| Group/Role | SYBASE LOGIN | Permissions Granted | | | | | |
|------------|-----------------------|---------------------|---|---|---|---|---|
| | | A | S | I | U | D | E |
| None | EcDmDimServer | | Y | | | | |
| None | EcDmLimServer | | Y | | | | |
| None | EcDmDictServer | Y | | | | | |
| None | EcDmV0ToEcsGateway | | Y | | | | |
| None | EcDmEcsToV0Gateway | | Y | | | | |
| None | EcDmAsterToEcsGateway | | Y | | | | |
| None | EcDmEcsToAsterGateway | | Y | | | | |
| None | EcDmLmClient | | Y | | | | |
| dbo_role | dms_role | Y | | | | | |
| None | sa | Y | | | | | |

6. Scripts

The scripts identified in this section may be found in the directory named /ecs/formal/DM/DDICT/src/database.

6.1 Installation Scripts

Scripts used to support installation of the DM Subsystem database are listed in Table 6-1.

Table 6-1. Installation Scripts

| Script File | Description |
|---------------|--|
| EcDmDdDbBuild | Create a new initialized DMS database |
| EcDmDdDbPatch | Upgrade an existing DMS database to the next valid database version level. |
| EcDmDdDbDump | Dump a specified DMS database on demand |
| EcDmDdDbLoad | Load a specified DMS database on demand. |
| EcDbDesc | List and detail the structure of all database objects in the specified ECS database. |
| EcDbChecksum | Provide row count totals for each of the tables in a specific ECS database |

6.2 De-Installation Scripts

Scripts used to support de-installation of the DM Subsystem database are listed in Table 8-2.

Table 6-2. De-Installation Scripts

| Script File | Description |
|--------------|---|
| EcDmDdDbDrop | Drop all objects in the specified DMS database. |

6.3 Backup and Recovery Scripts

Scripts used to perform backup and recovery of the DM Subsystem database are listed in Table 6-3.

Table 6-3. Backup and Recovery Scripts

| Script File | Description |
|-----------------|--|
| bcp.copyin.csh | Script to restore the data into the database |
| bcp.copyout.csh | Script to backup the data from the database |

6.4 Miscellaneous Scripts

Miscellaneous scripts and input data files that are applicable to the DM Subsystem database are listed in Table 6-4.

Table 6-4. Miscellaneous Scripts and Input Data Files

| Script or Data File | Description |
|--------------------------------|---|
| bcp.initdata.csh | Script used to populat initial data (.dat files) |
| DmDdECSAttributes.dat | A flat data file for populating the initial data (1 of 13) |
| DmDdECSAttributesShapes.dat | A flat data file for populating the initial data (2 of 13) |
| DmDdECSDiscipline.dat | A flat data file for populating the initial data (3 of 13) |
| DmDdECSTerm.dat | A flat data file for populating the initial data (4 of 13) |
| DmDdECSTopic.dat | A flat data file for populating the initial data (5 of 13) |
| DmDdECSVariab le.dat | A flat data file for populating the initial data (6 of 13) |
| DmDdInfoMgr.dat | A flat data file for populating the initial data (7 of 13) |
| DmDdInfoMgrXref.dat | A flat data file for populating the initial data (8 of 13) |
| DmDdInstrument.dat | A flat data file for populating the initial data (9 of 13) |
| DmDdMetadataLevel.dat | A flat data file for populating the initial data (10 of 13) |
| DmDdPlatform.dat | A flat data file for populating the initial data (11 of 13) |
| DmDdSensor.dat | A flat data file for populating the initial data (12 of 13) |
| DmDdSensorSDSRV.dat | A flat data file for populating the initial data (13 of 13) |
| DmDdInsertValidsMappingFmt.dat | Used to support update of the DDI CT |

Appendix A. Data Management Subsystem Entity Relationship Diagrams

This page intentionally left blank.

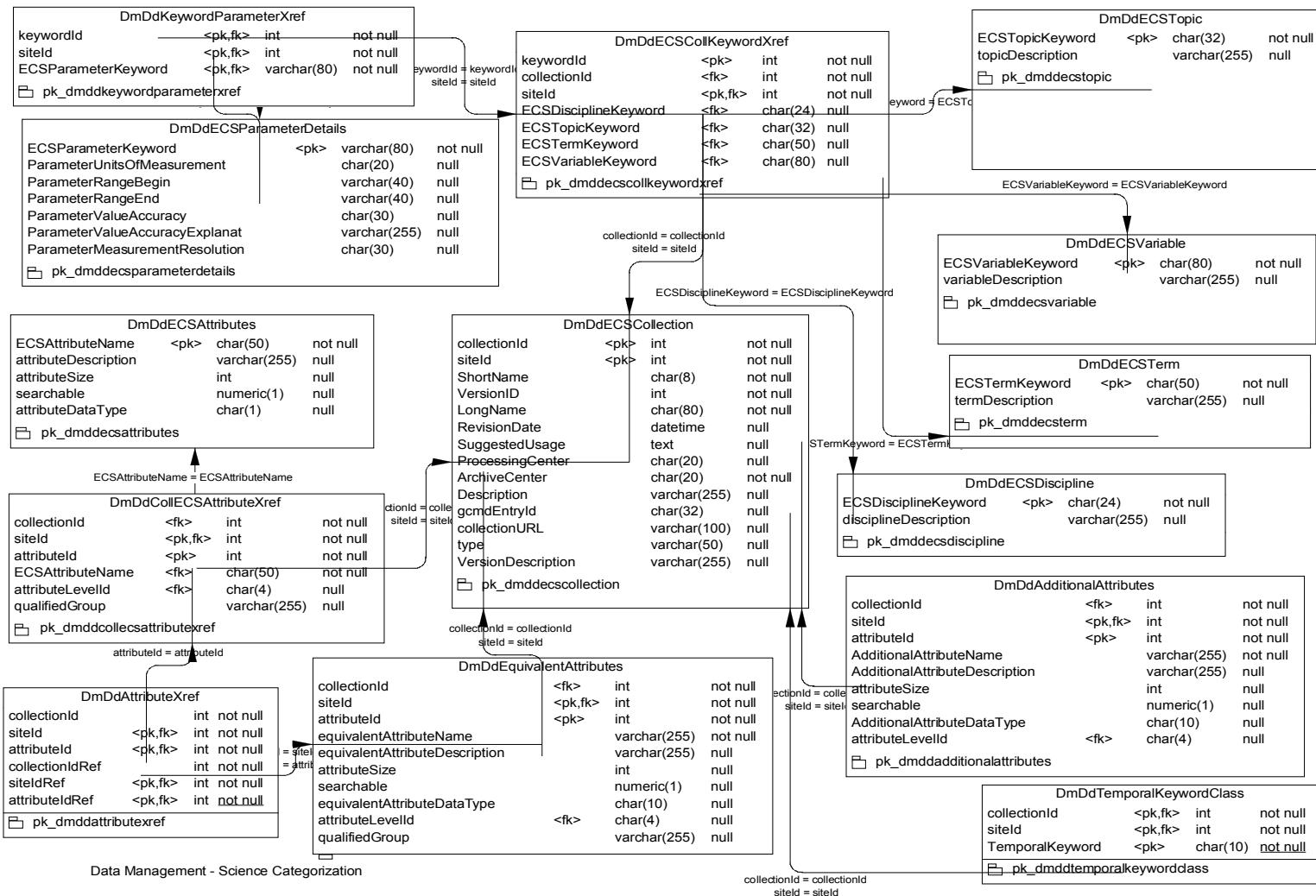


Figure A-1. Science Categorization

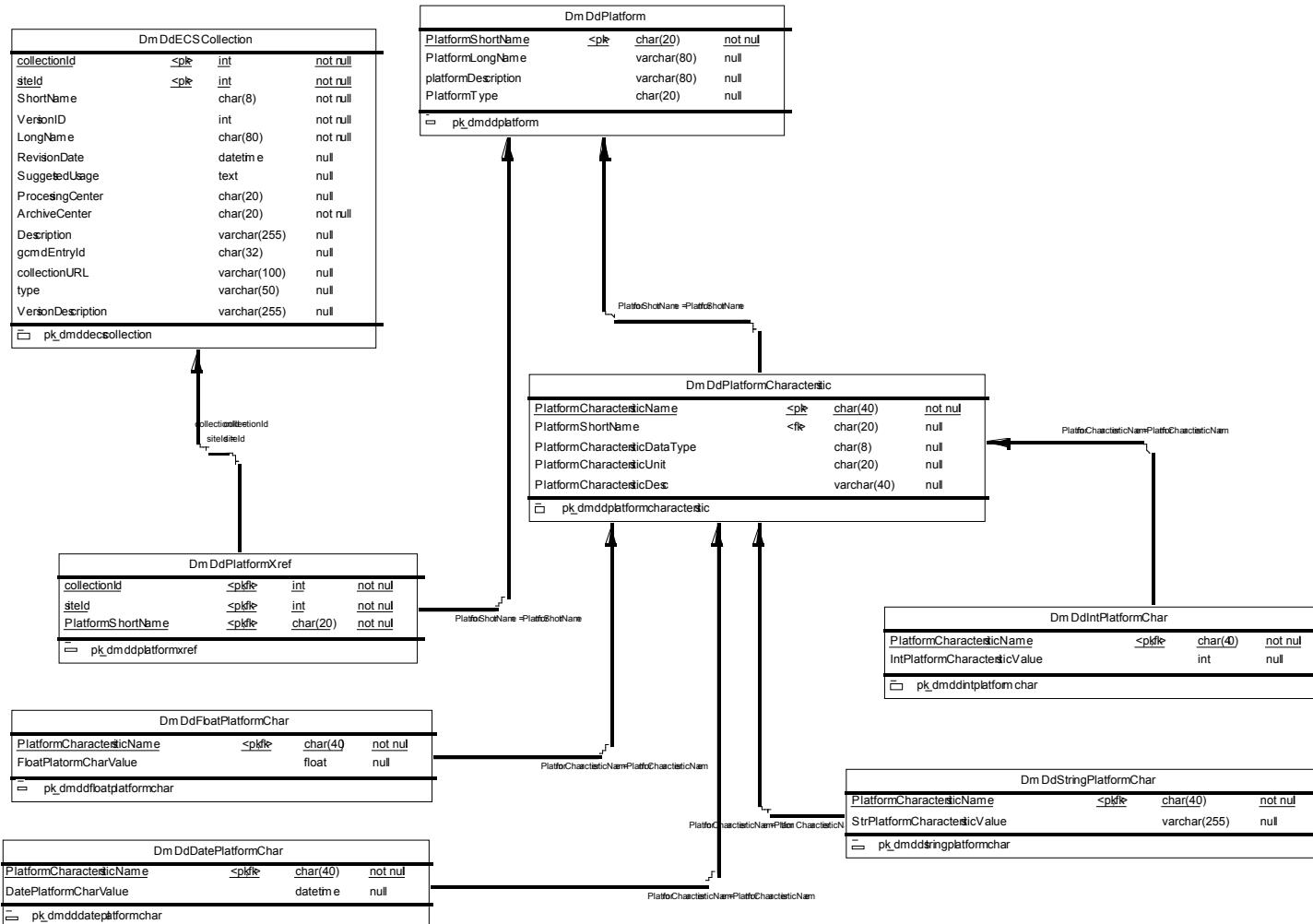


Figure A-2. Platform

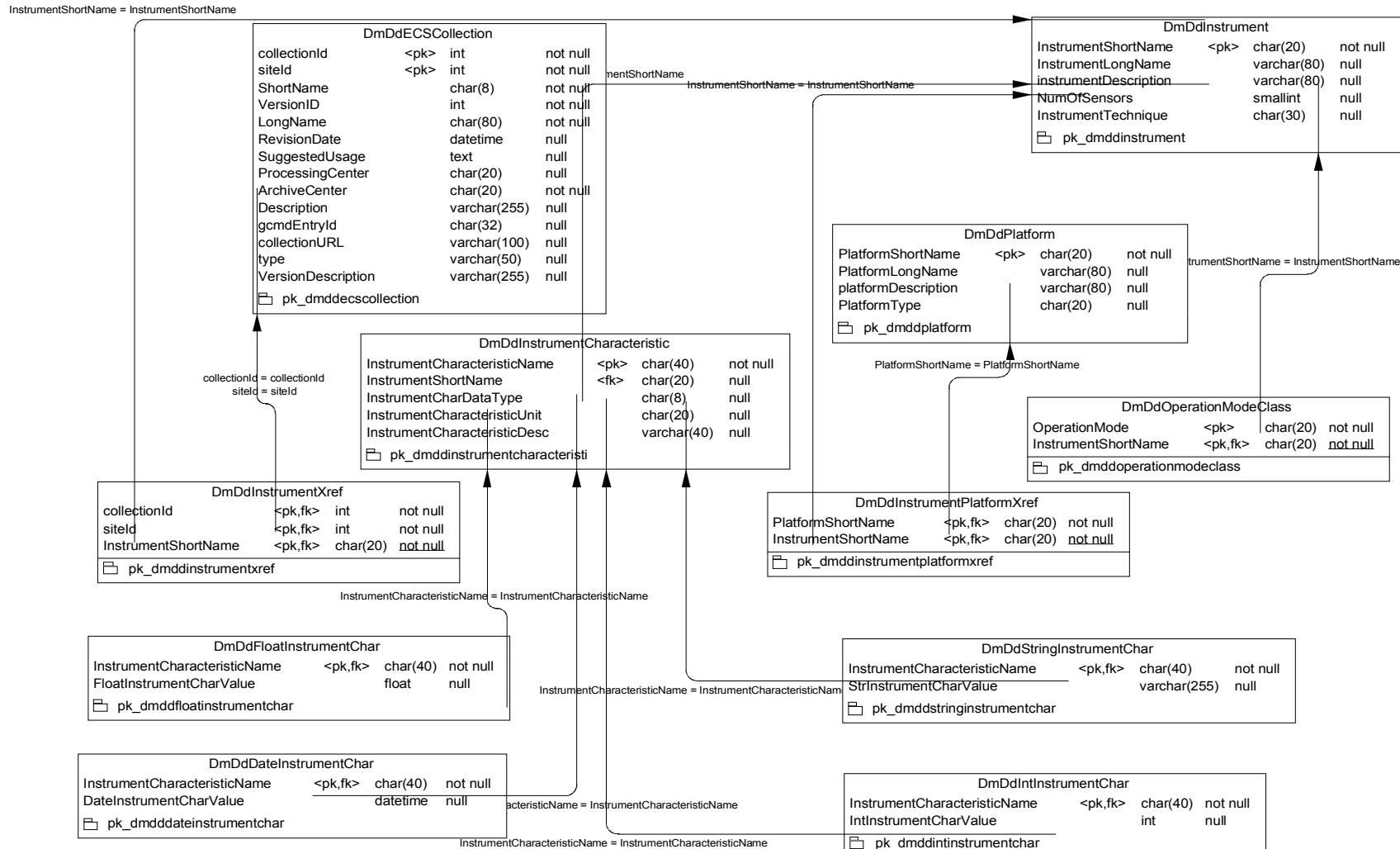


Figure A-3. Instruments

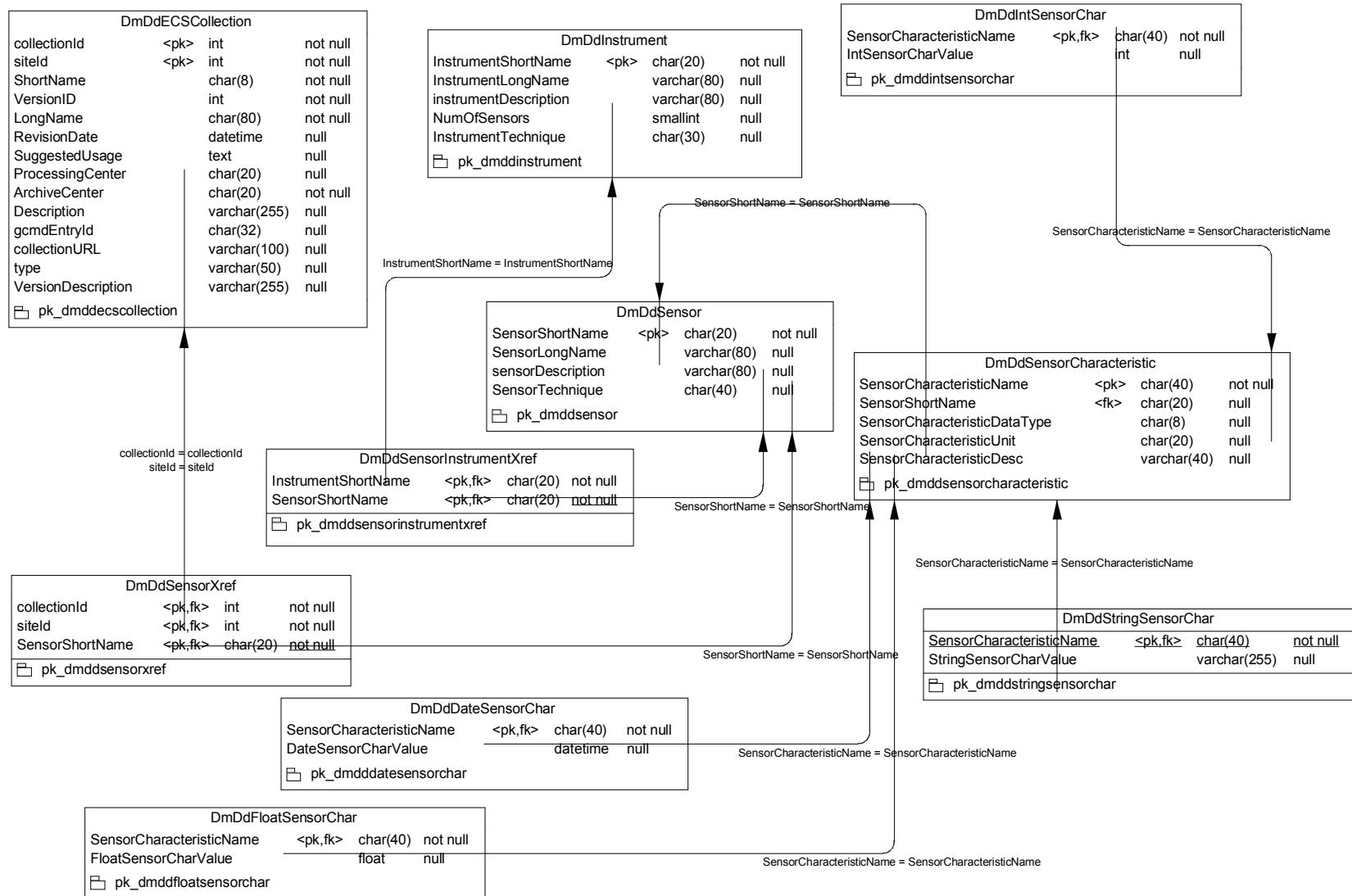


Figure A-4. Sensor

| EcDbVersions | | | |
|------------------------|------|--------------|----------|
| EcDbSchemaVersionID | <pk> | smallint | not null |
| EcDbDropVersion | | char(64) | not null |
| EcDbDropDescription | | varchar(255) | null |
| EcDbCurrentVersionFlag | | char(10) | not null |
| EcDbDatabaseName | | varchar(255) | null |
| EcDbDropInstallDate | | datetime | null |
| EcDbSybaseVersion | | varchar(255) | null |
| EcDbSybaseServer | | varchar(255) | null |
| EcDbComments | | varchar(255) | null |
| EcDbUpdateProcess | | varchar(255) | null |

Figure A-5. Database Versioning

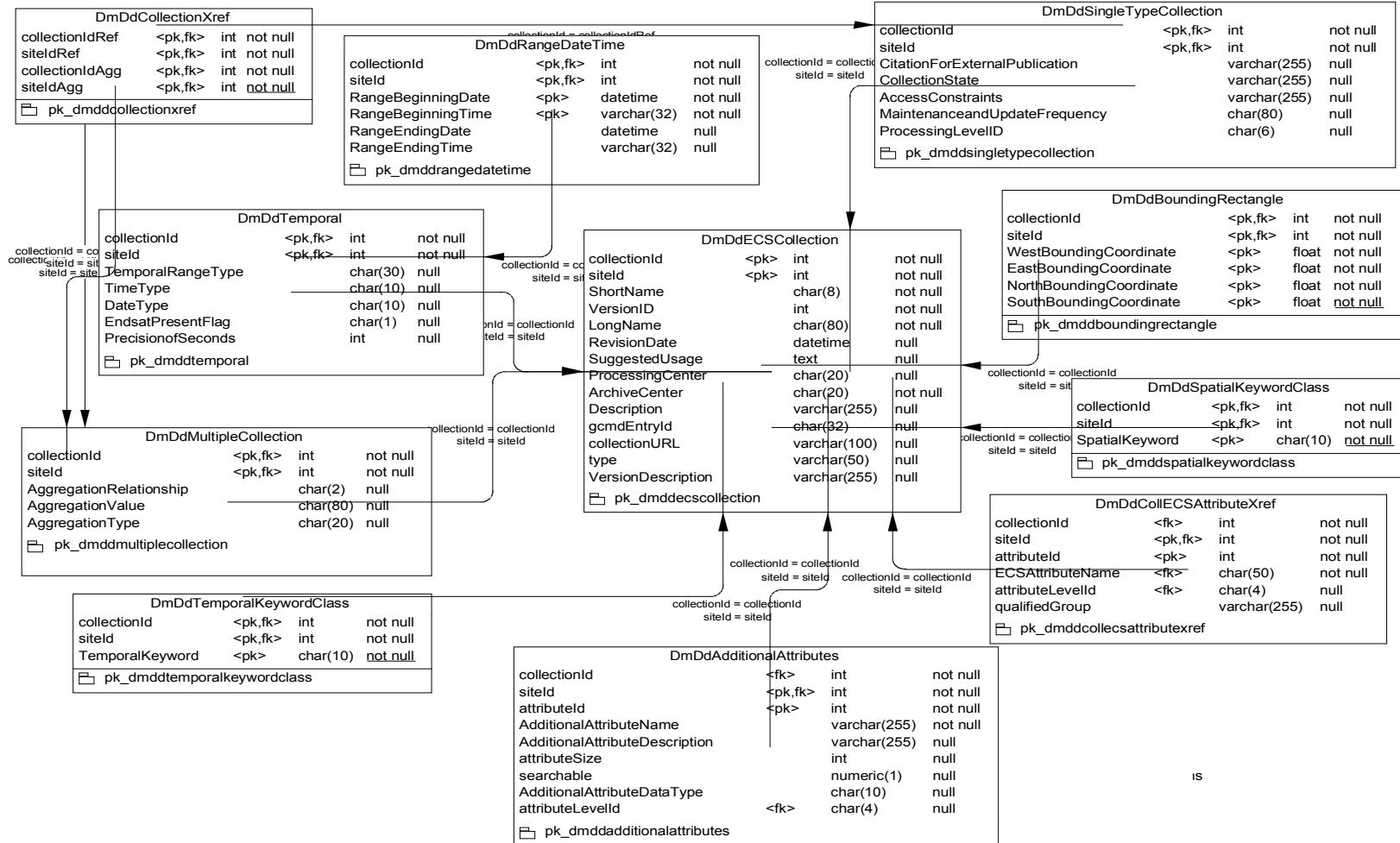


Figure A-6. ECS Collections

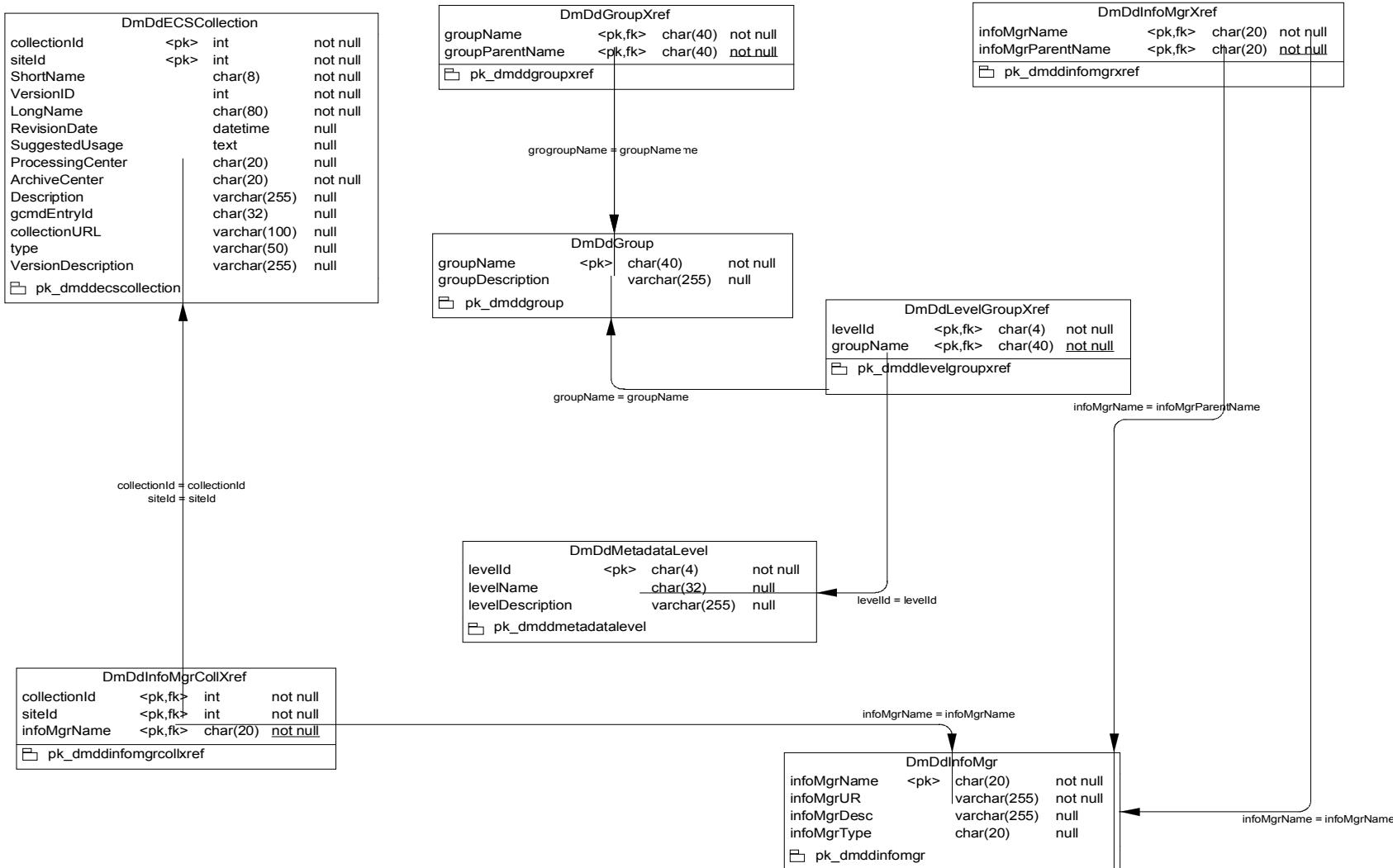


Figure A-7. Information Management

| <table border="1"> <thead> <tr><th colspan="3">DmDdECSDiscipline</th></tr> </thead> <tbody> <tr> <td>ECSDisciplineKeyword</td><td><code><pk></code></td><td>char(24) not null</td></tr> <tr> <td>disciplineDescription</td><td></td><td>varchar(255) null</td></tr> <tr> <td colspan="3"><code>pk_dmddecsdiscipline</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdGlossary</th></tr> </thead> <tbody> <tr> <td>GlossaryName</td><td><code><pk></code></td><td>char(80) not null</td></tr> <tr> <td>GlossaryDescription</td><td></td><td>text null</td></tr> <tr> <td colspan="3"><code>pk_dmddglossary</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdEquivalentAttributes</th></tr> </thead> <tbody> <tr> <td>collectionId</td><td><code><fk></code></td><td>int not null</td></tr> <tr> <td>siteld</td><td><code><pk,fk></code></td><td>int not null</td></tr> <tr> <td>attributeld</td><td><code><pk></code></td><td>int not null</td></tr> <tr> <td>equivalentAttributeName</td><td></td><td>varchar(255) not null</td></tr> <tr> <td>equivalentAttributeDescription</td><td></td><td>varchar(255) null</td></tr> <tr> <td>attributeSize</td><td></td><td>int null</td></tr> <tr> <td>searchable</td><td></td><td>numeric(1) null</td></tr> <tr> <td>equivalentAttribute DataType</td><td></td><td>char(10) null</td></tr> <tr> <td>attributeLevelld</td><td><code><fk></code></td><td>char(4) null</td></tr> <tr> <td>qualifiedGroup</td><td></td><td>varchar(255) null</td></tr> <tr> <td colspan="3"><code>pk_dmddequivalentattributes</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdAcronym</th></tr> </thead> <tbody> <tr> <td>acronymName</td><td><code><pk></code></td><td>char(15) not null</td></tr> <tr> <td>acronymDescription</td><td></td><td>text not null</td></tr> <tr> <td colspan="3"><code>pk_dmddacronym</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdTemporalKeywordClass</th></tr> </thead> <tbody> <tr> <td>collectionId</td><td><code><pk,fk></code></td><td>int not null</td></tr> <tr> <td>siteld</td><td><code><pk,fk></code></td><td>int not null</td></tr> <tr> <td>TemporalKeyword</td><td><code><pk></code></td><td>char(10) not null</td></tr> <tr> <td colspan="3"><code>pk_dmddtemporalkeywordclass</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdSite</th></tr> </thead> <tbody> <tr> <td>siteld</td><td><code><pk></code></td><td>int not null</td></tr> <tr> <td>siteName</td><td></td><td>char(4) null</td></tr> <tr> <td>localFlag</td><td></td><td>bit not null</td></tr> <tr> <td>collectionIdMax</td><td></td><td>int null</td></tr> <tr> <td>attributeldMax</td><td></td><td>int null</td></tr> <tr> <td>keywordIdMax</td><td></td><td>int null</td></tr> <tr> <td colspan="3"><code>pk_dmddsite</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdAdditionalAttributes</th></tr> </thead> <tbody> <tr> <td>collectionId</td><td><code><fk></code></td><td>int not null</td></tr> <tr> <td>siteld</td><td><code><pk,fk></code></td><td>int not null</td></tr> <tr> <td>attributeld</td><td><code><pk></code></td><td>int not null</td></tr> <tr> <td>AdditionalAttributeName</td><td></td><td>varchar(255) not null</td></tr> <tr> <td>AdditionalAttributeDescription</td><td></td><td>varchar(255) null</td></tr> <tr> <td>attributeSize</td><td></td><td>int null</td></tr> <tr> <td>searchable</td><td></td><td>numeric(1) null</td></tr> <tr> <td>AdditionalAttribute DataType</td><td></td><td>char(10) null</td></tr> <tr> <td>attributeLevelld</td><td><code><fk></code></td><td>char(4) null</td></tr> <tr> <td colspan="3"><code>pk_dmddadditionalattributes</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdValidsMapping</th></tr> </thead> <tbody> <tr> <td>PrimaryAttributeName</td><td></td><td>varchar(255) not null</td></tr> <tr> <td>PrimaryKeywordName</td><td></td><td>varchar(80) not null</td></tr> <tr> <td>MappedAttributeName</td><td></td><td>varchar(255) null</td></tr> <tr> <td>MappedKeywordName</td><td></td><td>varchar(80) null</td></tr> <tr> <td>Direction</td><td></td><td>varchar(10) not null</td></tr> <tr> <td colspan="3"><code>pk_dmddvalidsmapping</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdECSTerm</th></tr> </thead> <tbody> <tr> <td>ECSTermKeyword</td><td><code><pk></code></td><td>char(50) not null</td></tr> <tr> <td>termDescription</td><td></td><td>varchar(255) null</td></tr> <tr> <td colspan="3"><code>pk_dmddecstern</code></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th colspan="3">DmDdNumericDomain</th></tr> </thead> <tbody> <tr> <td>siteld</td><td><code><pk></code></td><td>int not null</td></tr> <tr> <td>collectionId</td><td></td><td>int not null</td></tr> <tr> <td>attributeld</td><td><code><pk></code></td><td>int not null</td></tr> <tr> <td>measurementResolution</td><td></td><td>varchar(50) null</td></tr> <tr> <td>numericDomainRule</td><td></td><td>varchar(50) not null</td></tr> <tr> <td>numericPrecision</td><td></td><td>float null</td></tr> <tr> <td>accuracy</td><td></td><td>varchar(50) null</td></tr> <tr> <td>accuracyExplanation</td><td></td><td>varchar(80) null</td></tr> <tr> <td>units</td><td></td><td>char(30) null</td></tr> <tr> <td colspan="3"><code>pk_dmddnumericsdomain</code></td></tr> </tbody> </table> | DmDdECSDiscipline | | | ECSDisciplineKeyword | <code><pk></code> | char(24) not null | disciplineDescription | | varchar(255) null | <code>pk_dmddecsdiscipline</code> | | | DmDdGlossary | | | GlossaryName | <code><pk></code> | char(80) not null | GlossaryDescription | | text null | <code>pk_dmddglossary</code> | | | DmDdEquivalentAttributes | | | collectionId | <code><fk></code> | int not null | siteld | <code><pk,fk></code> | int not null | attributeld | <code><pk></code> | int not null | equivalentAttributeName | | varchar(255) not null | equivalentAttributeDescription | | varchar(255) null | attributeSize | | int null | searchable | | numeric(1) null | equivalentAttribute DataType | | char(10) null | attributeLevelld | <code><fk></code> | char(4) null | qualifiedGroup | | varchar(255) null | <code>pk_dmddequivalentattributes</code> | | | DmDdAcronym | | | acronymName | <code><pk></code> | char(15) not null | acronymDescription | | text not null | <code>pk_dmddacronym</code> | | | DmDdTemporalKeywordClass | | | collectionId | <code><pk,fk></code> | int not null | siteld | <code><pk,fk></code> | int not null | TemporalKeyword | <code><pk></code> | char(10) not null | <code>pk_dmddtemporalkeywordclass</code> | | | DmDdSite | | | siteld | <code><pk></code> | int not null | siteName | | char(4) null | localFlag | | bit not null | collectionIdMax | | int null | attributeldMax | | int null | keywordIdMax | | int null | <code>pk_dmddsite</code> | | | DmDdAdditionalAttributes | | | collectionId | <code><fk></code> | int not null | siteld | <code><pk,fk></code> | int not null | attributeld | <code><pk></code> | int not null | AdditionalAttributeName | | varchar(255) not null | AdditionalAttributeDescription | | varchar(255) null | attributeSize | | int null | searchable | | numeric(1) null | AdditionalAttribute DataType | | char(10) null | attributeLevelld | <code><fk></code> | char(4) null | <code>pk_dmddadditionalattributes</code> | | | DmDdValidsMapping | | | PrimaryAttributeName | | varchar(255) not null | PrimaryKeywordName | | varchar(80) not null | MappedAttributeName | | varchar(255) null | MappedKeywordName | | varchar(80) null | Direction | | varchar(10) not null | <code>pk_dmddvalidsmapping</code> | | | DmDdECSTerm | | | ECSTermKeyword | <code><pk></code> | char(50) not null | termDescription | | varchar(255) null | <code>pk_dmddecstern</code> | | | DmDdNumericDomain | | | siteld | <code><pk></code> | int not null | collectionId | | int not null | attributeld | <code><pk></code> | int not null | measurementResolution | | varchar(50) null | numericDomainRule | | varchar(50) not null | numericPrecision | | float null | accuracy | | varchar(50) null | accuracyExplanation | | varchar(80) null | units | | char(30) null | <code>pk_dmddnumericsdomain</code> | | |
|---|----------------------------|-----------------------|--|----------------------|-------------------------|-------------------|-----------------------|--|-------------------|-----------------------------------|--|--|--------------|--|--|--------------|-------------------------|-------------------|---------------------|--|-----------|------------------------------|--|--|--------------------------|--|--|--------------|-------------------------|--------------|--------|----------------------------|--------------|-------------|-------------------------|--------------|-------------------------|--|-----------------------|--------------------------------|--|-------------------|---------------|--|----------|------------|--|-----------------|------------------------------|--|---------------|------------------|-------------------------|--------------|----------------|--|-------------------|--|--|--|-------------|--|--|-------------|-------------------------|-------------------|--------------------|--|---------------|-----------------------------|--|--|--------------------------|--|--|--------------|----------------------------|--------------|--------|----------------------------|--------------|-----------------|-------------------------|-------------------|--|--|--|----------|--|--|--------|-------------------------|--------------|----------|--|--------------|-----------|--|--------------|-----------------|--|----------|----------------|--|----------|--------------|--|----------|--------------------------|--|--|--------------------------|--|--|--------------|-------------------------|--------------|--------|----------------------------|--------------|-------------|-------------------------|--------------|-------------------------|--|-----------------------|--------------------------------|--|-------------------|---------------|--|----------|------------|--|-----------------|------------------------------|--|---------------|------------------|-------------------------|--------------|--|--|--|-------------------|--|--|----------------------|--|-----------------------|--------------------|--|----------------------|---------------------|--|-------------------|-------------------|--|------------------|-----------|--|----------------------|-----------------------------------|--|--|-------------|--|--|----------------|-------------------------|-------------------|-----------------|--|-------------------|-----------------------------|--|--|-------------------|--|--|--------|-------------------------|--------------|--------------|--|--------------|-------------|-------------------------|--------------|-----------------------|--|------------------|-------------------|--|----------------------|------------------|--|------------|----------|--|------------------|---------------------|--|------------------|-------|--|---------------|------------------------------------|--|--|
| DmDdECSDiscipline | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ECSDisciplineKeyword | <code><pk></code> | char(24) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| disciplineDescription | | varchar(255) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddecsdiscipline</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdGlossary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GlossaryName | <code><pk></code> | char(80) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GlossaryDescription | | text null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddglossary</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdEquivalentAttributes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| collectionId | <code><fk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| siteld | <code><pk,fk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| attributeld | <code><pk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| equivalentAttributeName | | varchar(255) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| equivalentAttributeDescription | | varchar(255) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| attributeSize | | int null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| searchable | | numeric(1) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| equivalentAttribute DataType | | char(10) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| attributeLevelld | <code><fk></code> | char(4) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| qualifiedGroup | | varchar(255) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddequivalentattributes</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdAcronym | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| acronymName | <code><pk></code> | char(15) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| acronymDescription | | text not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddacronym</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdTemporalKeywordClass | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| collectionId | <code><pk,fk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| siteld | <code><pk,fk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TemporalKeyword | <code><pk></code> | char(10) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddtemporalkeywordclass</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdSite | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| siteld | <code><pk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| siteName | | char(4) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| localFlag | | bit not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| collectionIdMax | | int null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| attributeldMax | | int null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| keywordIdMax | | int null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddsite</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdAdditionalAttributes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| collectionId | <code><fk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| siteld | <code><pk,fk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| attributeld | <code><pk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AdditionalAttributeName | | varchar(255) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AdditionalAttributeDescription | | varchar(255) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| attributeSize | | int null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| searchable | | numeric(1) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AdditionalAttribute DataType | | char(10) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| attributeLevelld | <code><fk></code> | char(4) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddadditionalattributes</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdValidsMapping | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PrimaryAttributeName | | varchar(255) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PrimaryKeywordName | | varchar(80) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MappedAttributeName | | varchar(255) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MappedKeywordName | | varchar(80) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Direction | | varchar(10) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddvalidsmapping</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdECSTerm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ECSTermKeyword | <code><pk></code> | char(50) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| termDescription | | varchar(255) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddecstern</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DmDdNumericDomain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| siteld | <code><pk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| collectionId | | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| attributeld | <code><pk></code> | int not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| measurementResolution | | varchar(50) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| numericDomainRule | | varchar(50) not null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| numericPrecision | | float null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| accuracy | | varchar(50) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| accuracyExplanation | | varchar(80) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| units | | char(30) null | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <code>pk_dmddnumericsdomain</code> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Figure A-8 Definitions (1 of 2)

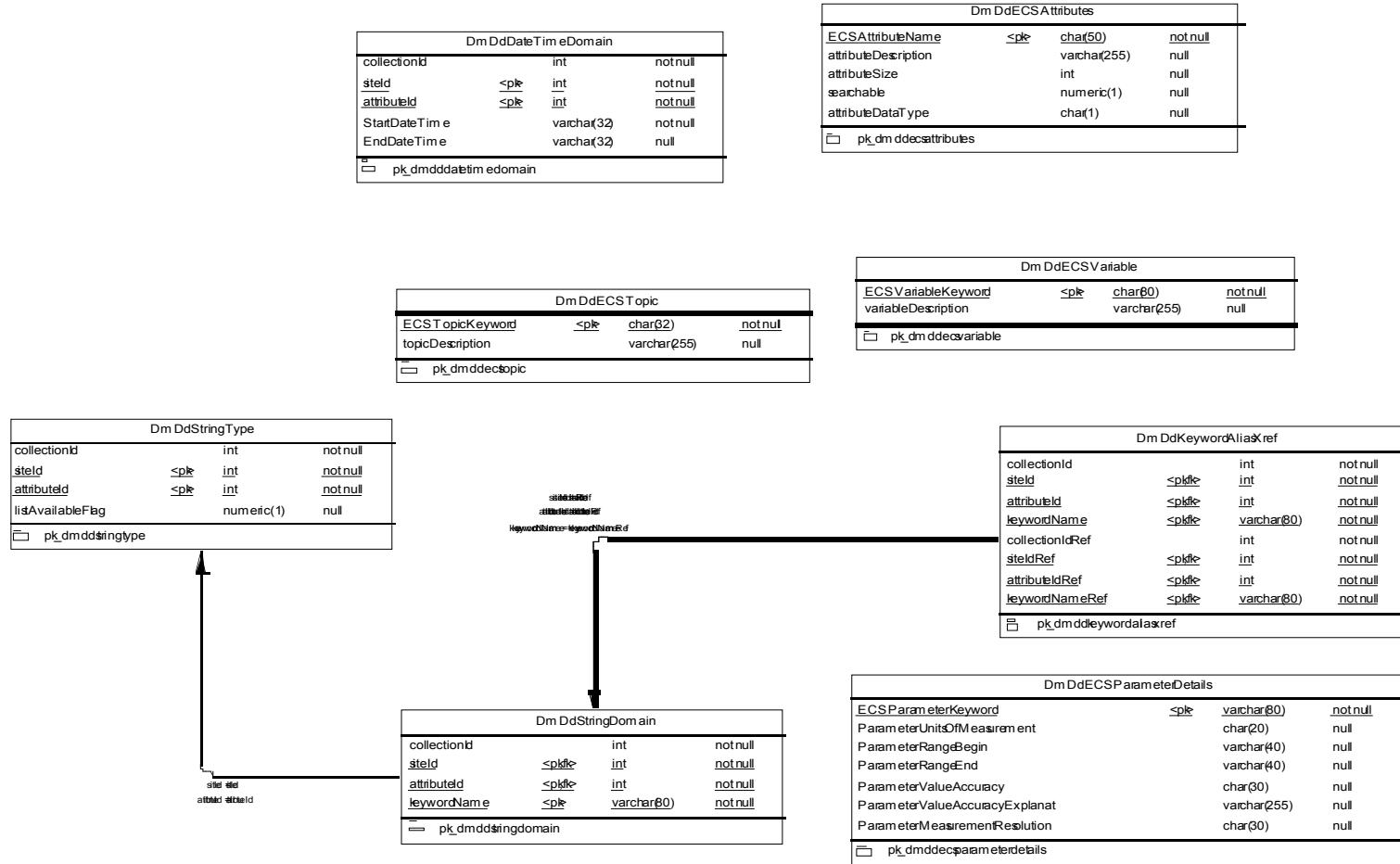


Figure A-8 Definitions (2 of 2)

This page intentionally left blank.

Abbreviations and Acronyms

| | |
|--------|--|
| ANSI | American National Standards Institute |
| ASCII | American Standard Code for Information Exchange |
| CASE | Computer Aided Software Engineering |
| CD | contractual delivery 213-001 |
| CDRL | contract data requirements list |
| CI | configuration item |
| COTS | commercial off-the-shelf (hardware or software) |
| CSCI | computer software configuration item |
| DAAC | Distributed Active Archive Center |
| DBCC | Database Consistency Checker |
| DBMS | Database Management System |
| DCN | Document Change Notice |
| DID | data item description |
| DMS | Data Management Subsystem |
| ECS | EOSDIS Core System |
| EDC | EROS Data Center |
| EDHS | ECS Data Handling System |
| EOSDIS | Earth Observing System Data and Information System |
| EROS | Earth Resources Observation System |
| ERD | Entity Relationship Diagram |
| ESDIS | Earth Science Data and Information System (GSFC) |
| ESDT | Earth science data types |
| ESN | EOSDIS Science Network (ECS) |
| FK | Foreign Key |
| GSFC | Goddard Space Flight Center |
| GUI | graphic user interface |

| | |
|---------|--|
| HDF | hierarchical data format |
| HDF-EOS | an EOS proposed standard for a specialized HDF data format |
| HTML | HyperText Markup Language |
| HTTP | Hypertext Transport Protocol |
| I/O | input/output |
| ICD | interface control document |
| INGST | Ingest Services CSCI |
| IOS | Interoperability Subsystem |
| LaRC | Langley Research Center (DAAC) |
| MSS | Management Support Subsystem |
| N/A | not applicable |
| NAS | National Academy of Science |
| NASA | National Aeronautics and Space Administration |
| NSIDC | National Snow and Ice Data Center (DAAC) |
| ODL | Object Definition Language |
| PCF | Process Control File |
| PDF | Portable Document Format |
| PDPS | Planning and Data Processing Subsystem |
| PGE | Product Generation Executive |
| PK | Primary Key |
| QA | Quality Assurance |
| SDSRV | Science Data Server CSCI |
| SQL | Structured Query Language |
| STMGT | Storage Management Software CSCI |
| SUBSRV | Subscription Server |
| WWW | World-Wide Web |